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THE

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UNIVERSITY

SEVENTH ANNUAL REGISTER

1897-1898

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STANFORD UNIVERSITY, CAL.
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DIRECTORY.

[The rooms in the Quadrangle are numbered consecutively beginning at the left of the main entrance, ten numbers being allotted to each building. Numbers 120 to 160 are in the Engineering buildings, south of the Quadrangle. The Psychological Laboratory is in the brick building near Escondite Cottage, east of Encina Hall.]

The office of the *President* is room 112.
The office of the *Registrar* is room 110.
The *Library* is room 2.

UNIVERSITY CALENDAR.

1897.

Aug.	30	Monday	Entrance Examinations begin.
Aug.	31	Tuesday	Registration of Matriculated Students.
Sept.	1	Wednesday	
Sept.	2	Thursday	Registration of New Students.
Sept.	3	Friday	Instruction begins.
Sept.	10	Friday	Conferring of Degrees.
Nov.	25	Thursday	Thanksgiving Recess.
Nov.	28	Sunday	
Dec.	22	Wednesday	First Semester ends.

1898.

Jan.	10	Monday	Entrance Examinations and Registration for Second Semester.
Jan.	11	Tuesday	
Jan.	12	Wednesday	Instruction begins.
Jan.	13	Thursday	Mid-Year Conferring of Degrees.
Feb.	22	Tuesday	Washington's Birthday.
Mar.	9	Wednesday	Founder's Day.
Mar.	26	Saturday	Mid-Semester Recess.
April	3	Sunday	
May	14	Saturday	Memorial Day.
May	20	Friday	Instruction ends.
May	21	Saturday	Entrance Examinations at the University.
May	23	Monday	
May	24	Tuesday	
May	22	Sunday	Baccalaureate Sermon.
May	23	Monday	Class Day.
May	24	Tuesday	Alumni Day.
May	25	Wednesday	Commencement.

Aug.	29	Monday	Entrance Examinations begin.
Aug.	30	Tuesday	Registration of Matriculated Students.
Aug.	31	Wednesday	
Sept.	1	Thursday	Registration of New Students.
Sept.	2	Friday	Instruction begins.
Sept.	9	Friday	Conferring of Degrees.
Nov.	24	Thursday	Thanksgiving Recess.
Nov.	27	Sunday	
Dec.	21	Wednesday	First Semester ends.

1899.

Jan.	7	Saturday	Entrance Examinations begin.
Jan.	9–10	Mon.-Tues.	Registration for Second Semester.

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28 Alvarado Row.

B. S., Cornell University, 1882; Ph. D., Indiana University, 1885. Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist for Thomas A. Edison in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the Insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, University of Indiana, 1885-91; State Geologist of Arkansas, 1887-92.

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*JOHN HENRY COMSTOCK, Professor of Entomology.

[*Ithaca, N. Y.*]

B. S., Cornell University, 1874; Instructor in Entomology, Cornell University, 1873-77, Assistant Professor, 1877-82; U. S. Entomologist, at Washington, 1879-81; Professor of Entomology and General Invertebrate Zoology, Cornell University, since 1882.

*Absent during 1897-98.

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Menlo Park.

A. M., Butler University, 1877. Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91.

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Ph. B., University of California, 1874; Ph. D., 1885. Assistant in Chemistry, University of California, 1873-75; Student in Chemistry, Strassburg and Würzburg, 1875-76; Instructor in Organic and General Chemistry, University of California, 1876-82; Chemist of the Boston and American Sugar Refining Company, 1882-92.

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B. S. Carthage College, 1879; M. S. 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91.

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B. C. E., Cornell University, 1878; C. E. Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91.

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B. M. E., Cornell University, 1878; M. M. E., 1886. Machinist and Contractor with Brown and Sharp Mfg. Co., Providence, R. I., 1879-80; Machinist and Shop Foreman, Straight Line Engine Works, Syracuse, New York, 1880-83; Superintendent Kingsford Foundry and Machine Works, Oswego, N. Y., 1883-86; Fellow in Mechanical Engineering, Cornell University, 1886-87, Assistant Professor, 1887-91; Professor of Machine Design, University of Wisconsin, 1891-92.

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Ph. D., University of Leipzig, 1886 Student, Universities of Freiburg and Leipzig, 1882-1888; Privat Docent, University of Leipzig, 1888-92.

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C. E., Cornell University, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton, (N. J.) Powder Co., 1887, Phœnix Powder Co., Farmingdale, N. J., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92.

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B. S., University of Vermont, 1878; Ph. D., University of Leipzig, 1891; L. H. D., University of Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92.

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B. C. E. and B. S., University of Wisconsin, 1883; M. S., 1885; C. E., 1887. Morgan Fellow in Mathematics, Harvard University, 1884-85; Instructor in Engineering, University of Wisconsin, 1885-89; Assistant Professor of Mechanics, 1889-91; Professor of Theoretical and Applied Mechanics, 1891-92.

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A. M., University of Edinburgh, 1882. Baxter Scholar in Mathematics, University of Edinburgh, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburgh, 1883-92.

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B. L., University of Nebraska, 1885; Ph. D, Johns Hopkins University, 1888. General Agent, Charity Organization Society, Baltimore, 1887-89; Professor of Political Economy, University of Nebraska, 1889-91; Superintendent of Charities, Washington, D. C., 1891-93.

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5 Salvatierra St.

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A. M., University of Michigan, 1884. Student, University of Leipzig, 1884-85, 1889-91; Member of the American School of Classical Studies at Athens, 1885-86; Instructor in Greek, University of Michigan, 1886-87, Instructor in Latin and Sanskrit, 1887-88, Acting Assistant Professor, 1888-89; Senior, Royal Archæological Seminary, University of Leipzig, 1890-91; Associate Professor of Greek, University of Missouri, 1891-92.

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A. B., Doane College, 1882; B. D., Andover Theological Seminary, 1885; A. M., Doane College, 1892. Pastor Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92.

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A. B., Harvard College, 1880. Assistant Professor of English, Hobart College, 1889-90; Instructor in English, Harvard University, 1890-92.

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*Absent on leave, 1897-98.

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Palo Alto.

Ph. B., De Pauw University, 1889; A. M., Leland Stanford Jr. University, 1893; Ph. D., University of Würzburg, 1896. Assistant in Biology, De Pauw University, 1888-89; Professor of Biology, Olivet College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96.

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Palo Alto.

Ph. B., Cornell University, 1880; M. S., 1882; Ph. D., Leland Stanford Jr. University, 1896. Teacher of History, Washington, D. C. High School, 1882-84; Teacher of History, Private School, Cincinnati, O., 1884-86; Instructor in History and Economics, Wellesley College, 1886-90, Registrar and Secretary of Board of Examiners, 1889-90.

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C. E., Cornell University, 1892. Instructor in Civil Engineering, Cornell University, 1892-93.

GEORGE KRIEHN, Assistant Professor of Social and Economic History. *Palo Alto.*

A. B., William Jewell College, 1887; Ph. D. University of Strassburg, 1892. Student in History and Art, Berlin, Freiburg, Zurich, Strassburg, Florence, 1887-92; Fellow by Courtesy, Johns Hopkins University, 1892-93, Instructor in History, 1893-94.

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B. S., Cornell University, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93.

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A. B., University of Toronto, 1890; A. M., 1893. Student, University of Leipzig, 1890-92; Fellow and Instructor in Romanic Languages, University of Toronto, 1892-95; Examiner in the University of Toronto, and to the Education Department of the Province of Ontario.

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M. E., Cornell University, 1893. With Gleason Machine Tool Co., Rochester, N. Y., 1893-94; with Bement and Miles, Philadelphia, 1894-95.

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A. M., Leland Stanford Jr. University, 1894; Ph. D., 1896. Student, University of Giessen, 1884-85, University of Kiel, 1885-91.

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A. B., Mississippi College, 1890; A. M., 1892; Ph. D., Johns Hopkins University, 1896. Principal, Preparatory Department, Mississippi College, 1890-91, Professor of English and History, 1891-93; Fellow in Johns Hopkins University, 1895-96; Lecturer in French Philology, Bryn Mawr College, 1896-97.

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CLYDE AUGUSTUS DUNIWAY, Assistant Professor of History. *Encina Hall.*

A. B., Cornell University, 1892; A. M., Harvard University, 1894; Ph. D., 1897. Instructor in History, Harvard University and Radcliffe College, 1896-97.

GEORGE JAMES PEIRCE, Assistant Professor of Botany and Plant Physiology. *Alondra Hall.*

B. S., Harvard University, 1890; Ph. D., University of Leipzig, 1894; Assistant in Botany, Harvard University and Radcliffe College, 1890-92; Parker Fellow in Harvard University, studying in Bonn, Leipzig, and Munich, 1892-94; Assistant Professor of Botany, Indiana University, 1895-97.

EDWARD DANA DURAND, Assistant Professor of Finance and Administration. *5 Salvatierra St.*

A. B., Oberlin College, 1893; Ph. D., Cornell University, 1896. Legislative Librarian, New York State Library, 1896-97; Student, University of Berlin, 1897.

†ELLWOOD P. CUBBERLEY, Assistant Professor of Education.

A. B., Indiana University, 1891. Professor of Physical Science, Vincennes University (Ind.), 1891-93, President, 1893-96; Superintendent of City Schools, San Diego, Cal., 1896-98.

EDWIN DILLER STARBUCK, Assistant Professor of Education. *12 Alvarado Row.*

A. B., Indiana University, 1890; A. M., Harvard University, 1895; Ph. D., Clark University, 1897. Teacher of Mathematics and Latin, Spiceland (Ind.) Academy, 1890-91; Professor of Mathematics, Vincennes (Ind.) University, 1891-93; Fellow in Psychology, Clark University, 1895-97.

*CHARLES WILSON GREENE, Assistant Professor of Physiology. [*Baltimore, Md.*]

A. B., Leland Stanford Jr. University, 1892; A. M., 1893.

*HAROLD HEATH, Assistant Professor of Zoology. [*Philadelphia, Pa.*]

A. B., Ohio Wesleyan University, 1893. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Natural Science, University of the Pacific, 1893-94; Fellow in Zoology, University of Pennsylvania, 1896-98.

CHARLES ELLWOOD COX, Acting Assistant Professor of Mathematics. *College Park.*

A. B., Haverford College, 1880; A. M., Leland Stanford Jr. University, 1893. Principal of Friends Academy, Le Grand, Iowa, 1880–85; Professor of Mathematics, University of the Pacific, 1886–91.

MARGARET E. SCHALLENBERGER, Instructor in Education. *6 Salvatierra St.*

Graduate California State Normal School, San Jose, 1880. Teacher in State Normal School, San Jose, 1887–92, Principal of Training Department, 1892–93. Student, Cornell University, 1895-97.

*CLELIA DUEL MOSHER, Iustructor in Hygiene and Organic Training. [*Baltimore, M. D.*]

A. B., Leland Stanford Jr. University, 1893; A. M., 1894.

†Beginning September, 1898.
*Absent on leave, 1897-98.

IRENE HARDY, Instructor in English.
Palo Alto.

A. B., Antioch College, 1885. Teacher of English and Latin, Preparatory School, Antioch College, 1874-76; Head of English Department and Teacher of Entomology, Oakland (Cal.) High School, 1877-83, Teacher of English, 1887-92.

ELMER ELSWORTH FARMER, Instructor in Electrical Engineering. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1895.

FREDERICK JOHN TEGGART, Assistant Librarian.
Palo Alto.

A. B., Leland Stanford Jr. University, 1894.

*HANS FREDERICK BLICHFELDT, Instructor in Mathematics.
[*In Europe.*]

A. B., Leland Stanford Jr. University, 1896.

ALFRED FRANCIS WILLIAM SCHMIDT, Instructor in German. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1895.

RAY LYMAN WILBUR, Instructor in Physiology.
Encina Hall.

A. B., Leland Stanford Jr. University, 1896; A. M., 1897.

CLARA STOLTENBERG, Instructor in Physiology.
Roble Hall.

A. B., Leland Stanford Jr. University, 1896; A. M., 1897.

ZOË WORTHINGTON FISKE, Instructor in Drawing and Painting. *Palo Alto.*

B. P., Syracuse University, 1891. Student and Member Art Students' League, New York, 1892-94; Student, Académie Montparnasse, Paris, 1895-96.

EDWARD LAMBE PARSONS, Instructor in the History of Philosophy. *Menlo Park.*

A. B., Yale University, 1889. Student, Union Theological Seminary, New York, 1889-92, Fellow, 1892-94; Student, University of Berlin, 1892-94; Instructor, New York Training School for Deaconesses, 1894-95.

CLARKE BUTLER WHITTIER, Instructor in Law.
8 Alvarado Row.

A. B., Leland Stanford Jr. University, 1893; LL. B., Harvard University, 1896.

ELEANOR BROOKS PEARSON, Instructor in Rhetoric.
Palo Alto.

A. B., University of Michigan, 1888. Principal, Castilleja Hall, 1891-98.

*Absent on leave, 1897-98.

JOHN O. SNYDER, Instructor in Zoology.
Palo Alto.

A. B., Leland Stanford Jr. University, 1897.

THOMAS ANDREW STOREY, Instructor in the Gymnasium.
Encina Gymnasium.

A. B., Leland Stanford Jr. University, 1896.

ASSISTANTS.

LILLIAN EMELINE RAY, Mistress of Roble Hall.
Roble Hall.

A. B., Leland Stanford Jr. University, 1897.

ANNA LOUISA BROWN, Artist of the Hopkins Laboratory.
Palo Alto.

B. P., Syracuse University, 1889.

MAUD MARCH, Assistant in the Gymnasium.
19 Salvatierra St.

LOUISE MAITLAND, Assistant in Education.
8 Salvatierra St.

MAX GOETHE WRIGHT, Assistant in Romanic Languages.
Palo Alto.

A. B., Leland Stanford Jr. University, 1896; A. M., 1897.

MARY MATILDA McLEAN, Assistant in English.
2 Portola Ave.

A. B., University of California, 1895. Graduate Student, Radcliffe College, 1895-97.

PERLEY GILMAN NUTTING, Assistant in Physics.
Palo Alto.

A. B., Leland Stanford Jr. University, 1897.

ANNIE LOUISE WRIGHT, Assistant in Mathematics.
Palo Alto.

A. B., Leland Stanford Jr. University, 1896; A. M., 1897.

WALTER ALFRED STAFFORD, Assistant in Mathematics.
Palo Alto.

A. B., Leland Stanford Jr. University, 1895.

WILLIAM APPLETON SNOW, Assistant in Entomology.
2 Alvarado Row.

B. S., University of Kansas, 1891; M. S., 1894.

WILLIAM FREEMAN SNOW, Assistant in Hygiene.
Palo Alto.

A. B., Leland Stanford Jr. University, 1896; A. M., 1897.

LESTER JESSE HINSDALE, Assistant in Law.
Palo Alto.
A. B., Leland Stanford Jr. University, 1895.

JULIUS EMBRET PETERSON, Foreman of the Forge.
College Terrace.

EDWARD SOULE, Foreman of the Woodworking Shop.
Palo Alto.

AUGUST WOLLENSCHLAGER, Curator of the Art Museum.
Museum.

ROBERT ECKLES SWAIN, Laboratory Assistant in Chemistry.
Palo Alto.

DORSEY ALFRED LYON, Laboratory Assistant in Chemistry.
16 Salvatierra St.

ROBERT EVANS SNODGRASS, Laboratory Assistant in Zoology. *Palo Alto.*

ADA EDWARDS, Assistant in the Gymnasium.
19 Salvatierra St.

WARREN HULL, Assistant in the Gymnasium, and Stenographer. *Palo Alto.*

HAROLD PHILLIPS HILL, Assistant in the Gymnasium.
Mayfield.

WILLIAM ANGUS SUTHERLAND, Library Assistant.
Palo Alto.

PHILIP FANNING ABBOTT, Library Assistant.
Mayfield.

JOHN EDWARD HEALEY, Library Assistant.
Palo Alto.

CHARLES SUMNER DOLE, Library Asssistant.
Lasuen Ave.

LILLIAN PEARLE GREEN, Library Assistant.
15 Salvatierra St.

JOHN EZRA McDOWELL, Assistant to the Registrar.
Mayfield.

WALTER CLARK, Stenographer.
14 Alvarado Row.

LECTURER.

JOSEPH HUTCHINSON, Lecturer in Law. *Palo Alto.*

A. B., University of Califoria, 1878; LL. B., Hastings Law School, 1882.

OTHER OFFICERS.

CHARLES EDWARD HODGES, Resident Architect. *Palo Alto.*

ROBERT HENRY MOORE, Chief Engineer. *Palo Alto.*

JOHN J. LEWIN, Electrician. *Palo Alto.*

GEORGE ADDERSON, Overseer of Buildings. *Encina Hall.*

CHARLES F. MOORE, University Plumber. *Menlo Park.*

CHARLES C. WALLEY, University Carpenter. *Mayfield.*

J. A. MARTIN, Gardener. *Palo Alto.*

STANDING COMMITTEES.

The Registrar is ex-officio *Chairman of the Committees on Admission and Advanced Standing, Registration, Entrance Requirements, and Graduation.*

Ways and Means: Professors STILLMAN, FLÜGEL, BRANNER, SANFORD, and MARX.

The Chairman of the Committee on Ways and Means is Acting President during the absence of the President.

Student Affairs: Professors THOBURN, GRIFFIN, GREEN, STILLMAN, and A. W. SMITH.

Admission and Advanced Standing: Professors ELLIOTT, MURRAY, A. W. SMITH, STILLMAN, and MILLER.

Doubtful Cases: Professors RICHARDSON, GILBERT, MURRAY, GRIFFIN, and ELLIOTT.

Registration: Professors ELLIOTT, GILBERT, WOOD, GREEN, and MARX.

Entrance Requirements: Professors ELLIOTT, ANDERSON, ALLARDICE, GOEBEL, and LENOX.

Chapel Services: Professors MILLER, SHOW, THOBURN, MURRAY, and M. R. SMITH.

Library: Professors NASH, BRANNER, DUDLEY, POWERS, and SHOW.

University Publications: Professors PEASE, NASH, BRANNER, LITTLE, and ELLIOTT.

Student Publications and Business Enterprises: Professors GREEN, LATHROP, A. B. CLARK, PERRINE, and MCFARLAND.

Graduation: Professors ELLIOTT, POWERS, PEASE, JENKINS, and HOSKINS.

Doctor's Degree: Professors MURRAY, STILLMAN, SHOW, HOSKINS, and GILBERT.

In the case of each candidate for the Doctor's degree two or three professors, representing the major and minor requirements, will be added to the Committee.

Contests and Prizes: Professors ROSS, LATHROP, ABBOTT, FAIRCLOUGH, and J. P. SMITH.

Use of Halls, Social Affairs, Etc.: Professors WOOD, G. A. CLARK, GREEN, LITTLE, and MISS RAY.

Musical Matters: Professors LATHROP, CAMPBELL, GOEBEL, ANGELL, and M. R. SMITH.

University Extension: Professors HUDSON, ROSS, ANDERSON, JENKINS, and GRIGGS.

Summer School: Professors FAIRCLOUGH, LATHROP, GREEN, and G. A. CLARK.

Public Exercises and Holidays: Professors GRIGGS, NEWCOMER, NASH, LENOX, and ELLIOTT.

Students' Aid: Professors DUDLEY, WING, GREEN, GRIFFIN, and M. R. SMITH.

Athletics: Professors ANGELL, WOOD, MURRAY, RICHARDSON, and WING.

Hopkins Laboratory: Professors JENKINS, GILBERT, PRICE, and MCFARLAND.

Organization and Administration.

Foundation.

The founding, at Palo Alto, of "a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree," was determined upon by the Hon. Leland Stanford and Jane Lathrop Stanford, in 1884. In March of the year following the Legislature of California passed an Act providing for the administration of trust funds in connection with institutions of learning. November 14, 1885, the Grant of Endowment was publicly made, in accordance with this Act, and on the same day the Board of Trustees held its first meeting, in San Francisco. The work of construction was at once begun, and the corner-stone laid May 14, 1887, the nineteenth anniversary of the birth of Leland Stanford, Jr. The University was formally opened to students October 1, 1891.

Name and Purpose.

The idea of the University, in the words of its founders, "came directly and largely from our son and only child, Leland; and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The object of the University, as stated in its Charter, is "to qualify students for personal success and direct usefulness in life," and its purposes, "to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness.

Location.

The University is located on the Palo Alto estate in the Santa Clara Valley, thirty-three miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The estate consists of eight thousand four hundred acres, partly lowland and

partly rising into the foothills of the Sierra Morena. On the grounds are the residence of the founders and an extensive arboretum containing a great variety of shrubs and trees. The Bay of San Francisco lies about three miles east of the University buildings, and across the bay the Monte Diablo Range rises to the height of over four thousand feet. The Lick Observatory, crowning Mount Hamilton, the highest of the range, is plainly visible. To the southwest, between the valley and the ocean, is the heavily wooded Santa Cruz Range, two thousand to four thousand feet in height.

The Santa Clara Valley is one of the most attractive portions of the State in climate, in natural beauty, and in the fertility and adaptiveness of its soil to all the varied fruits of California. The characteristics of the climate are its evenness of temperature, its pure and bracing air, and its freedom alike from the fogs and harsh winds of the coast and from the oppressive summer heat of the interior valleys. In winter the mercury rarely falls below 30°, and the average midday temperature is about 55°; in summer the average midday temperature is between 75° and 80°, while the nights are always cool. The rainfall of about fifteen inches is chiefly confined to the months from December to April, inclusive.

Endowment.

The landed endowment of the University, in addition to the Palo Alto estate, consists of the Vina estate, in Tehama County, of fifty-nine thousand acres, and the Gridley estate in Butte County, of twenty-two thousand acres. The Stanford residence in San Francisco has also been deeded to the University by Mrs. Stanford. The balance of the University endowment is in interest bearing securities.

Buildings.

In arranging buildings and grounds the plan has been to conform them to the peculiar climatic conditions of California, and to provide for indefinite expansion, without crowding or distortion. A series of quadrangles, to be erected as the needs of the University demand, are intended to furnish facilities for all general University work. Surrounding these are various detached buildings for miscellaneous purposes.

The central group of buildings will constitute two quadrangles, one entirely surrounding the other. Of these, the inner quadrangle, with the exception of the chapel, is now completed. Its twelve one-story buildings are connected by a continuous

open arcade, facing a paved court five hundred and eighty-six feet long, by two hundred and forty-six feet wide, or three and a quarter acres. The buildings are of a buff sandstone, somewhat varied in color. The stonework is of broken ashlar, with rough rock face, and the roofs are covered with red tile. The architectural *motif* is to be found in the old Spanish Missions of California.

The grounds to the east and west of the central quadrangles have been reserved for six smaller quadrangles, three on either side. Behind the central quadrangles are to be the workshops and laboratories of the engineering departments, power houses, etc,—of which the shops, foundry, and power houses are now completed.

The dormitories are east and west of the quadrangle. *Encina Hall*, for young men, is at the east and occupies a ground area of 312 x 150 feet. It is four stories high, built of the same material as the quadrangle, and decorated with end arcades, a central arched porch, and mosaic work. It is provided with electric lights, hot and cold water, steam heat, suitable furniture, bath rooms on each floor, and has accommodations for 300 students. *Roble Hall*, for young women, is at the west. It is of concrete, is about a third the size of Encina Hall, and will accommodate 100 students.

Encina and *Roble Gymnasiums* are substantial frame buildings, equipped with the necessary apparatus and appliances for physical training.

The *Leland Stanford Junior Museum*, a concrete building, 313 x 156 feet, including wings, is situated a quarter of a mile from the quadrangle, and on the west side of the Palo Alto avenue. At the main entrance, four large columns form the principal feature of the facade. The vestibule is 40 x 56 feet, and 70 feet high, and is faced with marble. The museum contains the archæological and art collections of the University.

The collection made by Leland Stanford, Jr., between 1880 and 1884, and intended as the nucleus of a museum to be established in San Francisco, has been placed here and his own arrangement reproduced. The collection includes especially Egyptian bronzes, Greek statuettes, and Greek and Roman glass of interest and value. One room is devoted to memorials of Senator Stanford. The Cesnola collection contains five thousand pieces of Greek and Roman pottery and glass. The Egyptian collection comprises casts of statuary and bas reliefs, mummies, scrolls, scarabees, etc.,

collected by Brugsch Bey, Curator of the Gizeh Museum, and Libyan pottery of the date of 3000 B. C., excavated by Dr. F. Petree. It contains, besides, a collection of embroideries, the gift of Mr. Timothy Hopkins, which is made up of linen dating from the sixth to the twenty-first dynasty, and also Coptic embroidery. The American collection is made up principally of mound relics; there is also a collection of stone implements from Copenhagen, Denmark. The Chinese and Japanese collection comprises bronzes, arms, china, lacquer, specimens of wood carving, cabinets, embroideries, musical instruments, etc. The Corean collection, the gift of Mr. Hopkins, contains costumes, household goods, cabinets, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals. The fine arts collections have been made mainly by Mrs. Stanford. There is also the Anna Lathrop Hughes collection of paintings, statuary, mosaics, etc., and a collection of pictures in oil and water colors presented by the Hon. Thomas Welton Stanford, of Australia.

The grounds immediately about the University have been reserved, in part for experimental purposes, and in part as residence sites for members of the Faculty and others who may desire to live on the University campus. About thirty cottages have already been erected.

Library.

One building of the quadrangle is at present devoted exclusively to the Library. It has a shelving capacity of forty thousand volumes, and the reading-room will accommodate one hundred and twenty-five students.

The library now numbers thirty-eight thousand volumes and eighteen thousand pamphlets. The most notable gift to the library has been the valuable collection of railway books presented by Mr. Timothy Hopkins, of San Francisco. This special collection is unusually rich in materials for the study of the early history of railways in Europe and America, and the donor has made generous provision for the maintenance and increase of the collection until it shall be practically complete. A catalogue of the Hopkins Railway Library has been published, thus greatly facilitating its use. During the past year a notable gift has been the collection of books and pamphlets relating to Australasia, presented to the library by Thomas Welton Stanford, Esq., of Melbourne, Australia.

The University has also acquired the valuable library of the

late Prof. Hildebrand, of Leipzig, consisting mainly of works on Germanic philology.

In addition to the University library, various large collections within reach can be made available to a greater or less extent. The Free Public, Mechanics Institute, Mercantile, and other libraries in San Francisco, can be used for reference. There are also at the University several large private libraries to which advanced students have access.

Scientific Collections.

It is intended to bring together in the museums of the University a full representation of the natural history and mineral products of California, collections of all books, pamphlets, photographs, and maps bearing upon the early history of the West, and full collections of Indian antiquities and illustrations of aboriginal life. It is desired to receive donations from all persons who are interested in the work and who have material of value to the museums. Collections sent in this way will be carefully labeled and preserved, and the name of the donor will be kept on record. Messrs. Wells, Fargo & Co. generously offer to transport such gifts to the University free of charge, and have instructed their officials "to receive and promptly forward such offerings as may be tendered from time to time."

Trustees.

The general management and control of the institution is vested in a board of trustees, originally numbering twenty-four, and chosen for life. By a modification of the charter, effected by Mrs. Stanford in 1897, no vacancies will be filled until the number is reduced to fifteen, and future appointments will be for a term of ten years. The charter provides that the founders, during their lives, shall "perform all the duties and exercise all the powers and privileges enjoined upon and vested in the trustees."

Faculty and Council.

The Faculty consists of the president, professors, associate professors, assistant professors, and instructors, aided by non-resident lecturers, assistants, and other officers. Its routine work is divided among various committees, responsible primarily to the president.

The University Council consists of the president, professors, and associate professors. To the Council are entrusted the

determination of requirements for admission, and for the various degrees, and the recommendation of candidates for graduation. It also acts as an advisory body on any questions of general policy that may be submitted to it by the president or trustees.

Government.

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

Religious Services.

Religious instruction is given in accordance with the provision of the Charter, which prohibits sectarian instruction, but requires the teaching of the "immortality of the soul, the existence of an all-wise and benevolent Creator, and that obedience to His laws is the highest duty of man." Voluntary chapel exercises are held daily, and a sermon or address on some religious or ethical subject is given every Sunday morning by some clergyman or layman invited from abroad, or by some member of the Faculty.

The University Chapel Union attempts to organize the religious forces of the University without defining beliefs, "for the promotion of the spiritual life through worship and service." A Students' Christian Association, a Young Men's Christian Association, and a Young Women's Christian Association have also been organized and hold regular meetings. The Associations have compiled a *Hand-Book* containing special information relating to the details of University life at Palo Alto, including library regulations, registration rules, boarding places, etc. This hand-book will be mailed to prospective students on application to the Registrar.

Student Organizations.

In addition to the Christian Associations noted above, numerous general student organizations have been formed for mutual assistance and improvement in various lines. Two college journals, the *Daily Palo Alto* and the weekly *Sequoia*, are published by the students. The *Quad* is an annual, published by the Junior Class.

Departments.

The professorship is the unit of organization, and each professor is independent in his own field. For convenience of classification the work of the University is grouped under the following departmental heads: Greek; Latin; Classical Philology; Germanic Languages; Romanic Languages; English Language and Literature; Psychology; Ethics; Bionomics; Education; History; Economics and Social Science; Law; Mathematics; Physics; Chemistry; Botany; Entomology; Physiology; Hygiene and Organic Training; Zoology; Geology; Drawing and Painting; Civil Engineering; Mechanical Engineering; Electrical Engineering.

The Hopkins Laboratory of Natural History, located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Admission and Graduation.

CONDITIONS OF ADMISSION.

Candidates for admission must be at least *sixteen* years of age, or if special students, *twenty-one*. They must present certificates of good moral character, and if from other colleges or universities, must bring letters of honorable dismissal.

I. Admission on Examination.

For meeting the entrance requirements of the University, candidates are offered a choice of twenty-two subjects. These subjects are all reduced to the unit of a high school year, making twenty-eight credits, and placed on an exact equality, except that subject 1*b* (English Composition) is required of all applicants. *Twelve* credits are necessary for admission to full standing, and these may be made up of English Composition (one credit) and such other subjects (aggregating eleven credits) as may be selected by the candidate.

1. English : *a* (1), *b* (1)
2. Elementary Algebra (2).
3. Plane Geometry.
4. Solid Geometry (½).
5. Trigonometry (½).
6. Advanced Algebra.
7. Physics.
8. Chemistry.
9. Physiology.
10. Botany.
11. Zoology.
12. Drawing.
13. Ancient History.
14. English History.
15. American History.
16. English Literature.
17. Spanish.
18. French (2).
19. German (2).
20. Elementary Latin (2).
21. Advanced Latin (2).
22. Greek (2).

Solid Geometry and Trigonometry count half a credit each; English, Elementary Algebra, French, German, Elementary Latin, Advanced Latin, and Greek, two credits each; all others, one credit each.

The following will indicate the amount of preparation necessary in the various subjects. The High School year here assumed is based roughly on an average of four recitation exercises of three quarters of an hour each, per week, in each subject.

1. English.—a. Candidates for admission who offer English 1*a* will be examined in reading aloud. In connection with this examination they will be tested in their ability to follow the course of thought in ordinary prose and verse, to use standard books of reference, to understand the structure of sentences, to catch simple allusions, and to see the force of simple figures of speech. The certificate of the teacher will be sufficient evidence of the amount of study done at school, the examination being intended as a test of the results of the school training. Such certificate, stating in detail the works read in preparation, should be handed to the examiner when the candidate presents himself at the University.

The teacher may make out the course of reading from the following list of books, choosing two books from Group I, one from Group II, one from Group III, and four from Group V:

Group I.—Shakspere's Merchant of Venice, Julius Cæsar, or Macbeth; the Four Gospels (one book); the stories of the Creation and Fall, the Flood, Abraham, Isaac, Jacob, Joseph and the Exodus, the books of Judges, Ruth, First and Second Samuel, Isaiah from chapter XL, and selections from the Psalms, (one book).

Group II.—George Eliot's Silas Marner; Jane Austen's Pride and Prejudice; Thackeray's The Newcomes, or Henry Esmond.

Group III.—Scott's Ivanhoe, Rob Roy, or Quentin Durward; Cooper's The Last of the Mohicans.

Group IV.—The Sir Roger de Coverley Papers; Selections from Boswell's Life of Johnson; Irving's Alhambra, or Sketch Book; Hawthorne's House of the Seven Gables, or Twice Told Tales; Webster's First Bunker Hill Oration; De Quincey's Flight of a Tartar Tribe; Macaulay's Essay on Clive; Carlyle's Essay on Burns.

Group V.—Spenser's Faëry Queene, Book I, Cantos I, II, and III; Dryden's Palamon and Arcite; Pope's Rape of the Lock (¼); Pope's Homer's Iliad, I, VI, XXII, XXIV; Goldsmith's Deserted Village (¼); Gray's Elegy in a Country Churchyard (¼); Burns's Tam o' Shanter and Cotter's Saturday Night; Keats's Eve of St. Agnes; Coleridge's Ancient Mariner; Scott's Lay of the Last Minstrel, Lady of the Lake, or Marmion; Lowell's Vision or Sir Launfal; Longfellow's Tales of a Wayside Inn.

[The foregoing requirements for English 1*a* will not go into effect until 1899. In 1898 the examinations will be based on the

requirements as heretofore stated in the *Register*—substantially similar to the New England requirements, or to those of the University of California.]

b. Every candidate will be required to undergo a test of his ability to write exercises correct in spelling, punctuation, sentence structure, and paragraphing. He may be called upon, for instance, to write a business letter upon some assigned subject, to put into his own language an essay, the material of which is provided him, or to write from dictation; or his examination papers in other subjects may be submitted to the examiner in English; in short, he may be subjected to any fair test of his mastery of the English language for the practical purposes of life.

[Students who are conditioned in English *1b* will be given an opportunity to make up their deficiency in voluntary classes under private tutors approved by the University. These tutors will charge a fee not exceeding ten dollars a semester.

2. Elementary Algebra.—Fundamental operations, factors, highest common factor, lowest common multiple, fractions, equations of first degree, fractional and negative exponents, surds, equations of the second degree in one or more variables, ratio and proportion, the progressions. Charles Smith's Elementary Algebra, or Wentworth's School Algebra, or Bowser's Academic Algebra, or an equivalent. (The equivalent of one and a half years in the High School.)

3. Plane Geometry.—A complete course in Plane Geometry such as is contained in Chauvenet's, Wentworth's, Bowser's, Wilson's, or Beman and Smith's Geometry, or in a good edition of Euclid. (The equivalent of one year in the High School.)

4. Solid Geometry.—A complete course in Solid Geometry such as is contained in Chauvenet's, Wentworth's, Bowser's, or Wilson's Solid Geometry. (The equivalent of one-half year in the High School.)

5. Trigonometry.—An elementary course in Plane Trigonometry such as is contained in Bowser's Elements of Trigonometry, in Wells's Plane Trigonometry, or in Lock's Elementary Trigonometry. (The equivalent of one-half year in the High School.)

6. Advanced Algebra.—Combinations and permutations, convergence of series, binomial theorem, logarithms, exponential

and logarithmic series, partial fractions, and a short treatment of determinants. Chapters i-xxiv and xxxi of Charles Smith's Treatise on Algebra, or an equivalent. (The equivalent of one year in the High School, in addition to the elementary course in Algebra.)

7. **Physics.**—The equivalent of one year's work in the High School, including both laboratory and text-book work. It is preferred that at least one-half the time be given to laboratory work in which the students perform individually such experiments as are described in the better class of laboratory manuals, of which Hall and Bergen's Physics may be named as an example. The text-book study should cover the ground of such a text as Nichols' Outlines, Gage's Elements, or Carhart and Chute's Physics. These books are not recommended as superior to others, but are mentioned as including about the amount of work on which the candidates should be prepared.

8. **Chemistry** —Beside the usual text-book and recitation work, each student should have a course in the laboratory, where he performs the experiments for himself. The amount of laboratory work desired cannot be obtained with less than four hours per week for one school year spent in actual laboratory work. It is preferred that the laboratory work be entirely upon *general,* rather than partly upon *analytical* chemistry. The course required is comprised in Richardson's Laboratory Manual and Principles of Chemistry, or in Remsen's Introduction to the Study of Chemistry. The inorganic portion of Roscoe's Elementary Chemistry, or of Elliot & Storer's Elementary Chemistry, with a proper course of laboratory experiments such as is given in Smith & Keller's Laboratory Manual, are also recommended as covering the course required.

It is the purpose of the Department of Chemistry to exempt those who receive credit in subject 8 from the elementary course in Chemistry in the University. For this reason any course short of an approximate equivalent of one semester's work in the University will not be acceptable.

9. **Physiology**. — The elements of human physiology and hygiene, the equivalent of Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope. (The equivalent of one year in the High School.)

In placing Physiology in the list of entrance subjects the fact that Physiology is not generally taught in the High School is recognized. Still it is thought that candidates who come from High Schools where the subject is pursued for at least a year, should have the opportunity of presenting the work for entrance to the University. This explanation may make it clear that candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject as one of the entrance subjects to the University. The elementary physiology and hygiene of the grammar grades, in this regard, is in the same category as are the other subjects studied in the grammar grades such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance.

10. Botany.—A knowledge of plants and plant-structure and development obtainable from experimental work in connection with Bessey's or Campbell's Botany, or some similar work. (The equivalent of a full year in the High School, of which two-thirds at least should be laboratory work.)

In stating the requirements for students presenting themselves for examination in botany, the main thing had in mind was that the work should be of a practical nature; that is, that the study should be done mainly from specimens and not from books. It must be borne in mind that botany is a department of biology, and means something more than the mere collecting and naming of specimens. A study of the growth and development of the forms studied is of the highest importance, and so far as possible should be made a prominent feature in the work. A good plan for most schools is to select a few typical representatives of the principal groups of plants, e. g., examples of the green, red, and brown algae, moulds, mildews, lichens, liverworts, mosses, ferns, etc., as well as representatives of the great divisions of the flowering plants. Examples of all these are everywhere accessible, and a knowledge of the main characteristics of each of the principal divisions of plants will be expected of the student. The forms selected are to be studied as exhaustively as circumstances will admit, and students should be expected to keep a careful record of their work in the form of notes and drawings made directly from the specimens as they are studied.

If possible the student should be allowed the use of a compound microscope, but when this is not practicable, microscopic demonstrations by the instructor are indispensable. The

laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary, but this must be understood to supplement and not to replace the laboratory work.

11. Zoology.—A knowledge of the structure and relationships of a number of types of animals, gained by study and dissection of specimens in the laboratory. Marshall & Hurst's Practical Zoology is recommended as a laboratory guide. (The equivalent of a full year in the High School.)

12. Drawing.—The ability to draw and shade correctly objects in any one of the following groups: *Group I.*—Colored still-life objects, vases, jars, machine parts, books, boxes, etc., the drawing of which involves perspective knowledge in foreshortening areas and convergence of lines in squares, hexagons, circles, and other common forms; also the interpretation of local color values in light and shade. *Group II.*—The head or figure from casts or the head from life. Drawings must show knowledge of artistic anatomy, and if of the head must be of full size. *Group III.*—Landscape including buildings.

The full equivalent of two hundred and forty hours of systematic work in the High School is necessary for preparation. Candidates are expected to provide their own materials for the examination, which should include the instrument most familiar to them, as brush, pen, pencil, or charcoal.

13. Ancient History.—After 1898 the entrance requirements in this subject will comprise three topics, together covering at least one year of High School work, to wit:

a. *The Oriental Nations.* The candidate should master Myers' General History, pp. 1-86, and Fisher's Brief History of the Nations, pp. 1-58, or satisfactory equivalents.

b. *Greece.* The best available text is Oman's History of Greece. Myers' General History, pp. 87-221, should also be studied. The pertinent volumes in the "Epochs of Ancient History" Series are valuable for reference.

c. *Rome.* As the basis of study the pupil is advised to use Allen's Short History of the Roman People (reprinted in Myers' General History, pp. 222-365), and Pelham's Outlines of Roman History. For reference, use also Shuckburgh's History of Rome, How and Leigh's History of Rome, Bury's History of the Roman Empire (Student Series), and the "Epochs" Series.

In addition to the usual examination in these subjects, the candidate will be required to submit a history note-book containing notes on all lectures and readings, copies of outlines, exercises, etc., prepared for use in his school work, and such other matter as may serve to indicate the nature of his study. Full particulars concerning this part of the requirement will be furnished on application, by any of the instructors in History. They will also gladly make suggestions concerning methods of study and the selection of reference libraries.

After 1898, students who receive entrance credits in subjects 13, 14, and 15, may be exempted from the elementary courses in History (History 1 and History 13) in the University. After that date students who take History courses in the University will not be allowed thereafter to earn entrance credit in the same subjects.

[In 1898 the examination in entrance subject 13 will cover only Greek and Roman History as heretofore outlined in the *Register* under subject 15.]

14. History of England. — The equivalent of Gardiner, Student's History of England (New York and London, 1890), and Fonblanque, How We Are Governed. These may be supplemented by readings in Green, History of the English People, and the Epochs of Modern History Series. (The equivalent of one year in the High School.)

[After 1898 candidates will be required to submit note-books in this subject in accordance with the plan outlined under subject 13.]

15. American History.—A thorough knowledge of some advanced text-book, such as Channing's Students' History of the United States, Montgomery's Students' History of the United States, McMaster's History of the United States, or the "Epochs of American History" Series, together with Macy's Our Government, or Fiske's Civil Government. These should be studied topically, in connection with illustrative material such as is contained in American History Leaflets, Old South Leaflets, Hart's American History told by Contemporaries, and Sheldon's Studies in American History. MacCoun's Historical Geography of the United States, will prove a valuable aid; and for further reading the American Commonwealths Series are recommended.

[After 1898 candidates will be required to submit note-books in this subject in accordance with the plan as outlined under subject 13.]

16. English Literature.—The examination in this subject will be similar to that in entrance subject 1*a*, but the candidate will be expected to show greater insight and power of interpretation, and will be called upon to answer questions presupposing a thorough study of the books presented for the examination. Preparation should include a study of subject-matter, style, and structure. Teachers may make out a course from the following list, selecting one book from Group I, one from Group II, and taking up the whole of Group III. Repetition of books offered for subject 1*a* should be avoided.

Group I.—Macbeth; Paradise Lost, books I and II; portions of the Bible.

Group II.—Macaulay's Essay on Clive, on Warren Hastings, on Milton (½), on Addison (½), or Life of Johnson (½); DeQuincey's Flight of a Tartar Tribe; Burke's Speech on Conciliation.

Group III.—Hales's Longer English Poems, omitting Spenser's Prothalamion and Shelley's Adonais, and employing only such annotations as are of value in giving a full understanding of the text; or Syle's From Milton to Tennyson, or equivalent selections from Shelley, Coleridge, Wordsworth, Tennyson, Browning, and Palgrave's Golden Treasury.

[The foregoing requirements for English 16 will not go into effect until 1899. In 1898 the examinations will be based on the requirements as heretofore stated in the *Register*, which are substantially similar to the requirements for English 14 at the University of California.]

17. Spanish.—The preparation in Spanish should follow the same lines as those outlined below for French. The following books are recommended: Manning, Practical Spanish Grammar, Matzke's First Spanish Readings (Heath & Co.), Tamayo y Baus, Un Drama Nuevo (Jenkins, New York), Galdos, Doña Perfecta (Ginn & Co). (The equivalent of one year in the High School.)

18. French.—The requirements for French are as follows: 1. An accurate knowledge of the forms of the language, including the inflections, conjugations, and principal parts of verbs. Particular attention should be devoted to this part of the subject; constant drill in the verbal inflections, both written and oral, ought to give the desired results. Dictation exercises, where English forms are to be rapidly translated into French, are especially recommended. 2. The elements of French syntax,

such as the uses of the article, the personal pronouns, and the subjunctive, the partitive constructions, and the agreement of the participles. 3. The ability to turn easy English into French. 4. The ability to translate ordinary French readily and rapidly. 5. The ability to pronounce French correctly. It is believed that a fairly good pronunciation of French can be obtained in the fitting schools, where students are still young and the organs of speech are more readily trained, if the necessary time is devoted to the subject. French pronunciation should be studied both theoretically and practically, and the differences of vowel qualities, of stress, pitch, and intonation between French and English should be pointed out.

These results ought to be secured from the careful study of an elementary grammar, such as Whitney's Practical French Grammar, Part I, or Grandgent's Short French Grammar; in prose composition, from the study of the exercises belonging to these grammars and the translation of the first thirty-four pages of Grandgent's Selections for French Composition; in reading, from the study of Super's French Reader, Parts II and III, Souvestre, Un philosophe sous les toits, Halévy, L'Abbé Constantin, Labiche, Le voyage de Monsieur Perrichon, and De Vigny, La Canne de jonc. For the study of pronunciation Matzke's Primer of French Pronunciation (Holt & Co.) is recommended. (The equivalent of two years in the High School.)

Every candidate will be expected to present a statement from his former teacher of the amount of work done and the text-books used. The examination will also contain a passage in French to be read aloud by the applicant.

19. German.—A satisfactory preparation will require: the ability to translate easy German prose and verse at sight; an accurate knowledge of the principles of grammar, embracing especially inflections and syntax, the composition of words, the force of prefixes and suffixes, and the relation of the English and the German consonantal changes; also the ability to translate easy prose from English into German. This preparation would be represented approximately, in reading, by Brandt's or Whitney's Reader, and the careful study of one or more modern dramas; in grammar, by Whitney's, Brandt's, Joynes-Meissner's, or Collar-Eysenbach's Grammar; and in German prose, by the first twenty-six exercises in Harris's German Prose Composition. (The equivalent of two years in the High School.) All applicants

must present a statement from their former teacher of the amount of German read and the text-books used.

20. Elementary Latin.—The requirements for Elementary Latin include accuracy in pronunciation, a thorough knowledge of the forms, familiarity with the simpler principles of syntax, a vocabulary of from 1500 to 2000 common words, and the ability to translate easy prose at sight, and to write simple sentences.

These attainments ought to be secured from the careful study of an elementary text-book and about 120 pages of classical prose (for instance, four books of Cæsar and two or three orations of Cicero), together with *daily* exercise in oral or written composition and occasional practice at sight reading. The examinations in Latin Composition for 1898 and 1899 will be based upon the third and fourth books of Cæsar's Gallic War, and the first two orations of Cicero against Cataline.

21. Advanced Latin.—The requirements for Advanced Latin include the ability to translate at sight the simpler portions of Cicero's orations and Vergil's Æneid, familiarity with the principles of Latin hexameter, and the power to translate a passage of connected English based on Cicero.

These attainments ought to be secured from the careful study of four or five orations of Cicero and six books of Vergil's Æneid, if supplemented by daily exercises in composition in connection with the Cicero, and by extensive practice in sight reading.

22. Greek.—Grammar, the inflections, the formation of words, and the essential points of syntax; Xenophon, Anabasis, books I-IV; Homer, Iliad, books I-III; Prose Composition, ability to write easy connected prose (Collar and Daniell's text-book is recommended); translation at sight of easy prose.

A thorough understanding of the ordinary forms of syntax is expected, and the student should be able to translate into *idiomatic* English. A passage of simple prose is selected for sight translation, and a brief English passage for translation into Greek. It is expected of every student that he be able to read Greek aloud without stumbling.

Partial Standing.

Candidates may be admitted to partial standing in the University upon securing at least *ten* entrance credits, if in the judgment of the Faculty they are qualified to go on with regular University work. All deficiencies must be made up before a student can be admitted to full standing.

Time of Examination.

Examinations in all entrance subjects are held at the University in January, May, and August-September, and will not be held at any other time or place. Specimen examination papers may be obtained on application to the Registrar.

Entrance examinations are held in the following order (for dates see calendar, page 5):

First Day. — Physiology, 8:30 — 10:30; Elementary Algebra, 10:30 — 12:30; Plane Geometry, 1:30 — 3:30; English, 3:30 — 6:00.

Second Day.—Advanced Algebra, Spanish, and Physics, 8:30 — 10:30; German and Greek, 10:30 — 12:30; Solid Geometry, English History, and French, 1:30 — 3:30; Elementary Latin, 3:30 — 6:00.

Third Day.—Advanced Latin, Chemistry, and Botany, 8:30 — 10:30; Trigonometry and English Literature, 10:30 — 12:30; American History and Zoology, 1:30 — 3:30; Grecian and Roman History and Drawing, 3:30 — 6:00.

Candidates for admission may, if they prefer, take a part of their examinations a semester or a year before they propose to enter; but no account will be taken of examinations passed more than a year before the proposed time of entering.

II. Admission on Certificate.

The University does not agree, in advance, to exempt the graduates of any school from all entrance examinations. Recommendations from the principal of any reputable preparatory school will be considered, and examinations waived in all entrance subjects fairly covered in the candidate's course of study, subject to the following conditions:

1. The candidate must have completed a full course in the school and have been duly graduated.

2. The candidate must be specifically recommended by the principal in the subjects in which exemption is sought.

3. The Faculty reserve the right to require an examination in any recommended subject, if for any reason the work done is deemed insufficient or unsatisfactory.

4. For the present, certificates will not be accepted in English Composition, Latin Prose Composition (unless by special arrangement), Physiology, Botany, Zoology, and Drawing. After 1898 certificates will also not be accepted in English 1*a*, English Literature, and Physics.

5. In Physics and Chemistry, recommendations must be

accompanied by the laboratory note books of the candidate These note books should contain the actual notes taken in the laboratory, not copies, and must be certified by the teacher. [After 1898 note books must also be presented in Ancient History, History of England, and American History.]

After 1898, entrance credit in Physics will be given only upon examination. Candidates may present properly certified note books containing the records of their laboratory work, and if these are approved by the department such candidates will be examined only upon the text-book. All candidates whose note books are not approved, and those who do not present note books will be examined upon both the text-book and laboratory work.

6. Recommended graduates of the San Jose, Los Angeles, and Chico State Normal Schools, may be admitted, without examination, except in English 1*b*, to provisional undergraduate standing, such standing subject to revision after one year's attendance.

Credits secured by passing the regular entrance examinations of other institutions of recognized collegiate rank, may be offered in place of recommendations from approved schools, provided a sufficient number have been passed to secure admission in regular standing to the institution from which the credits are offered. Partial credits will not be considered.

Exemptions from entrance examinations are granted on satisfactory recommendations as a matter of mutual convenience, and to save applicants from unnecessary worry; at the same time it is not considered that the requirement of an examination is necessarily a hardship, and the University will not hesitate to prefer examinations in all cases where there is doubt either as to the quantity or quality of the work offered.

Recommendations will be considered at any time of the year, but since, in general, no one can be assured of admission to the University without examination in one or more subjects, it is important that certificates be forwarded as early as possible.

Blanks for admission on certificate may be obtained from the Registrar.

III. Admission as Special Students.

Persons at least twenty-one years of age, who do not fulfill the regular entrance requirements, but who offer a substantial equivalent in experience in teaching or other practical preparation, or in special attainment in some particular line, may be admitted

as special students under such conditions as shall be deemed wise in each individual case.

Special students are subject to the same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements, including those for entrance.

A failure on the part of any special student to maintain a good standing in the studies to which he is admitted will at once sever his connection with the University; and a special student suspended for failure in University work may be readmitted only upon attaining regular undergraduate standing.

Blank applications for admission as special students may be obtained from the Registrar.

IV. Admission to Advanced Standing.

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Every such candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has completed, including studies passed or credited at entrance. Blank applications for admission to Advanced Standing may be obtained from the Registrar.

All applications for advanced standing on the basis of work done before entering the University, must be filed within one semester after matriculation; and such applications will not be received at a later date.

Students from other institutions, whose credentials are satisfactory, are usually admitted, without examination, to a minimum standing of one year less than that to which they are entitled at the institution from which they come. At the same time they are admitted to such classes as their preparation seems to warrant. After one semester's residence, if their work has been thoroughly successful and of sufficiently high grade, the terms of admission may be readjusted, and such additional credit given as may then be deemed just by the Faculty; but no such student can finally be given advanced credit for more than three years' work (ninety hours toward graduation).

V. Admission to Graduate Standing.

Graduates of this University, and of other institutions of recognized collegiate rank, may be admitted to graduate standing

in the University upon presentation of diplomas or equivalent credentials. They may become candidates for advanced degrees upon fulfilling the conditions prescribed by the Faculty. In case they become candidates for the baccalaureate degree, the question of hours required for graduation may be waived and the degree conferred on the satisfactory completion of the major subject and at least thirty hours of University work. Graduate students not candidates for any degree, may be admitted, upon the approval of the major professor, to such work as their previous training seems to warrant.

GRADUATION.

Candidates may present themselves for graduation in January, May, and September.

No degree will be granted to any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

I. First Degree.

The degree of *Bachelor of Arts* (A. B.) is granted to students who have satisfactorily completed the equivalent of four years' work of fifteen hours of lecture or recitation weekly, or a total of one hundred and twenty hours, and who have also satisfied the requirements in major and minor subjects.

Each student selects as his major subject or specialty the work of some one professor. This professor has the authority to require the completion of this *major* subject, and also of such *minor* subjects in other departments as he may consider necessary or desirable collateral work. Such major and minor requirements taken together will not exceed forty hours of University work, or one-third of the student's time for the four years of undergraduate work.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The professor in charge of the major subject of any student is expected to act as advisor to the student in educational matters, and the recommendation of such professor is necessary to graduation.

II. Advanced Degrees.

Every applicant for an advanced degree must file at the Registrar's office, not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This application must be approved by the major professor, and upon acceptance by the Faculty the applicant is admitted to candidacy for such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the major professor, and shall be presented in its final form at least six weeks before the close of the semester in which the degree is sought. Accepted theses shall be bound in a uniform style and deposited in the University Library. No advanced degree will be conferred except upon the recommendation of the appropriate Faculty committee.

The degree of *Master of Arts* (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. The course of study for the Master's degree is intended to correspond in amount and character to the first year's work for the Doctor's degree.

In the departments of applied science the professional degree of *Engineer* is conferred upon graduates of this university, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

The degree of *Doctor of Philosophy* (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time

or course, nor for miscellaneous study. Three years represent the minimum time in which the degree can be obtained and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private study without sufficient guidance, or pursued at a distance from libraries or laboratories or other necessary facilities, be accepted as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. The course of study shall embrace one major subject and one or two minors in related departments. The minor subject or subjects shall represent approximately one-third of the course of study; except that such minor subjects may be waived, on the recommendation of the department in which the major subject is taken and with the approval of the Faculty, whenever the general preparation or special needs of the candidate make such a course seem desirable.

4. The candidate must present a thesis of such a character as shall display power of original and independent investigation and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Faculty, within one year after the degree is conferred, and must deposite one hundred copies in the University Library.

5. The candidate must sustain such final examinations in major and minor subjects as may be prescribed by the departments in which studies are taken, and also shall submit to such tests or examinations as may be required by the special committee of the Faculty. This special committee, jointly with the department in which the major work is taken, shall be responsible for the fitness of the candidate.

UNIVERSITY REGULATIONS.

Registration in the University.

On the appointed Registration Days, in September and January, each student must obtain a certificate of registration *in person*, at the Registrar's office. On registering the student receives a card for selection of studies for the semester. This card must be filled out, with the approval of the major professor, and returned to the Registrar within ten days. After this date no changes can be made during the semester except by petition. Study cards not

filed within ten days after the beginning of the semester must be approved by all the instructors under whom work is to be taken. Matriculated students may register after the appointed Registration Days only upon payment of an additional fee of two dollars.

Enrollment in Classes.

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. In general, the pre-requisites for taking any given course are noted under "Courses of Instruction."

Change of Studies.

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration of Studies a petition for such change, approved by the major professor and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many hours or too few hours, and if presented within one month after the beginning of the semester, are granted without further action. If presented at a later time they will be granted only for extraordinary reasons.

Change of Major Subject.

Petitions to change the major subject will be granted when approved by the professors in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work.

Fifteen hours per week of recitations or lectures, or their equivalent in laboratory work, constitute an average semester's work. Students may register for less than *thirteen* or more than *eighteen* hours only by permission of the Committee on Registration; but a student who has received a mark of failure or condition in the semester immediately preceding may not register for more than *fifteen* hours except by permission of the Committee on Registration. Petitions for irregular hours should be made at the beginning of the semester.

Every hour for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week, through one semester. Thus, in lecture or recitation work, one hour is allotted to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student. Where the time is wholly occupied with drawing, field, or laboratory work, three full hours per week through one semester are expected of the student for each hour that counts toward graduation. Where the drawing, field, or laboratory work is supplemented by systematic outside reading or experiment under the direction of the instructor, such a reduction may be made in actual drawing, field, or laboratory time as seems just to the department concerned.

Conditions and Failures.

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. Work reported as incomplete must be made up within one semester. A student failing in any subject cannot go on with the subject, nor receive credit for the portion in which the failure is incurred, until the subject has been re-registered and taken over again in class. A condition or failure, or withdrawal from class without permission of the Committee on Registration of Studies, limits the student to *fifteen* hours the semester following.

Entrance Conditions.

Students admitted to partial standing may make up deficiencies by (1) completing before graduation, in addition to the one hundred and twenty hours required for graduation, five hours of University work for each entrance credit lacking (except in the case of English 1*b*, which must be passed on examination); or (2) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University.

From Special to Regular Standing.

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of subjects. In place of entrance examinations University

work to the amount of five hours for each entrance credit may be offered in subjects which are also entrance subjects; but not more than five hours of University work may be thus transferred for a subject counting one credit on entrance, and not more than ten hours for a subject counting two credits on entrance.

Advanced Standing on Entrance Subjects.

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, on the recommendation of the departments concerned. But such advanced standing will be given only for entrance subjects which are also University subjects, and only in cases where the subject for which advanced credit is asked has been successfully continued in the University within two years after matriculation, and where the student's general University record is deemed proof of superior scholarship. Applications for such advanced standing must be made within two years after matriculation.

Advanced Standing for Special Courses.

Matriculated students pursuing courses of study outside of regular University classes, during any summer vacation or while absent from the University for one or more semesters, may receive credit toward graduation for such work only upon the following conditions:

1. Such proposed work must be duly outlined in advance by the student and must be approved by the instructor whose University courses it most nearly follows, by the student's major professor, and by the Committee on Advanced Standing.
2. Examinations in such work must be taken at the University within one month after re-entering.
3. Before being admitted to such special examinations a fee of ten dollars must be paid to the University.
4. Not more than six hours may be credited toward graduation for any such special work completed during any summer vacation or during any semester's absence from the University.

Leave of Absence.

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness the petition must be indorsed by the Professor of Hygiene. A leave of absence is merely a

justification of the absence and not a relief from the work that has been missed. Petitions for absence over one or more semesters should also be presented to this committee.

EXPENSES OF THE STUDENT.

Tuition in all departments of the University is free. In 1898-99 registration fees will be charged as follows, payable on registration: Regular undergraduate students, *ten dollars* per semester; special and partial students, *fifteen dollars* per semester. These fees cover registration, library, and other incidental expenses of the University. In addition, students in laboratory courses pay for the materials which they use. The deposits required in advance are different for the different courses, ranging from two to twenty dollars per semester.

The cost of living in Encina and Roble Halls, including board, furnished rooms, light, heat, and attendance, averages about twenty-five dollars per month. Students furnish their own linen, blankets, towels, and napkins. Rooms may be reserved in advance by depositing two dollars with the Registrar.

In the two villages of Palo Alto and Mayfield, each about a mile from the University, good rooms and board, in private houses, can be obtained at from eighteen to twenty-five dollars per month. Houses can also be rented for the use of clubs and societies. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, can easily go to and from the University daily. Omnibuses connect with all trains at Palo Alto. A careful list of available boarding places outside the Halls, compiled by the Christian Associations, may be consulted at the Registrar's office during the opening week in September, and new students will find no difficulty in securing accommodations after their arrival.

The expenses of the student, exclusive of clothing and railway fares, need not exceed $225 to $300 per year.

SELF-SUPPORT OF STUDENTS.

No provision has been made for affording direct pecuniary assistance to students, but a considerable number manage in one way or another to earn the whole or a part of their expenses

while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, and the management of various student enterprises.

During the year 1897-98 the Faculty Committee on Student Aid registered without charge all students who applied for employment, and supplied employers with student labor as demanded. In general, the demand and supply were very nearly equal, but the Committee desire to call the attention of new students who intend to earn the whole or a part of their living, to the following results of their experience:

1. There is a constant *over supply* of those wishing to do teaching, clerical labor, typewriting, and stenography. None but those having superior qualifications and experience are likely to secure employment the first year, and most of these have this year been obliged to resort to manual labor.

2. There is constant demand for students (both men and women) who can do domestic labor of any kind; many earn board and room rent by waiting on table, washing dishes, general housework, house cleaning, gardening, etc. The money value of such labor is usually reckoned at fifteen cents per hour.

3. Students who can do any kind of domestic or manual labor *well*, and who have thoroughly good health, can earn from one-half to two-thirds of their expenses; with considerable effort and by taking five years to graduate, they may earn the whole. But the Committee strongly advise that no student should come to the University without resources sufficient for the expenses of one semester. There have been several instances of failure in studies and serious ill-health on the part of those who have come without resources.

4. The University curriculum is adapted to those who have control of their entire time for study. No student who must earn his living, therefore, should undertake to graduate in four years.

5. No student should come expecting to earn money, who can do nothing well; skill is absolutely essential, as the competition for labor is quite as severe in the college community as elsewhere.

The *Student's Guild* is a regularly incorporated association for mutual assistance in cases of sickness or other unusual emergency. Its resources are mainly the voluntary contributions of students and faculty, fifty cents per semester being the ordinary subscription.

Courses of Instruction.

[*Courses for 1897–98, with Announcements for 1898–99.*]

CLASSICAL LANGUAGES.

Professors Pease, Murray, Miller, and Fairclough, and Assistant Professor Dodge.

The undergraduate courses in Greek and Latin are intended to give the student careful training in the languages themselves, an acquaintance with the representative authors of classical literature, and some insight into the life, culture, and civilization of ancient Greece and Rome. The instruction in the lower courses is given chiefly by means of recitations; as the student advances these are supplemented by lectures, and he is encouraged to make more and more use of the library, and to become familiar with the standard books of reference.

The graduate courses are intended primarily for those who are looking forward to teaching as their profession. They are intended to give a broader and more comprehensive knowledge of the classical languages and literature than is afforded in the undergraduate courses, and to offer training in the methods of philological criticism and research. The work centers in the Seminaries, each composed of a director and such graduate students as shall satisfy the director of their fitness for the work. Some author or department of literature is chosen for the year's study, and the students are expected to read extensively in the literature, usually with some particular end in view. At the weekly meetings of each Seminary the students present the results of their study in the form of interpretations, reports, reviews, and original papers. An essential part of the graduate course is the series of lectures by the several professors on topics connected with the work of the Seminaries, or on subjects of importance to the advanced student.

The student who elects Greek or Latin, or both, as his major subject is expected to choose one of the professors in his

department as his major professor, and to look to him for direction in his major and minor subjects and for advice in educational matters.

The degree of Bachelor of Arts in Classical Philology will be granted to students who have pursued both Greek and Latin to an extent which shall meet the approval of the classical faculty.

GREEK.

UNDERGRADUATE COURSES.

1. Elementary.—Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, passages of continuous prose are taken up for translation and, as soon as is practicable, the Anabasis. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced. This course does not count as a part of the major work for students in Greek.

5 hrs., both semesters. (MURRAY.)

2. Herodotus and Homer.—Selections from Herodotus and the Odyssey. Course 2 is open to those who have offered subject 22 on entrance, or who have completed course 1 in the University.

3 hrs., 1st semester. (FAIRCLOUGH.)

3. Plato and Lysias.—A continuation of course 2. The Apology and Crito, and selections from Lysias.

3 hrs., 2d semester. (FAIRCLOUGH.)

4. Prose Composition and Sight Translation.—Simple Prose is taken up for sight reading, and the exercises are based upon the text read. Course 4 is required of all students in courses 2 and 3 who are making Greek their major study.

2 hrs., both semesters. (FAIRCLOUGH.)

5. Homer.—A critical study of the Iliad, with discussions and papers on Homeric topics. Open to those who have completed courses 2 and 3, or an equivalent.

3 hrs., 1st semester. (MILLER.)

6. Oratory.—Jebb's Selections from the Attic Orators, with lectures. A continuation of course 5.

3 hrs., 2d semester. (MILLER.)

7. Prose Composition and Sight Translation.—Selections for translation will be made from the historical and philosophical writers. A variety of practical exercises in Greek composition

will be prepared according to the needs of the class. Open only to those who have completed course 4, or an equivalent, but required of major students before graduation.

2 hrs., both semesters. (MURRAY, MILLER.)

8. **Greek Tragedy.** — The Prometheus of Aeschylus, the Oedipus Tyrannus and Electra of Sophocles, and the Hippolytus and Iphigeneia Taurica of Euripides will be read and interpreted.

3 hrs., both semesters. (MURRAY.)

9. **Plato.**—A study of the Republic, accompanied by lectures.

3 hrs., 1st semester. (FAIRCLOUGH.)

10. **Thucydides VII, and Demosthenes, De Corona.**—Special attention will be paid to Greek history and rhetorical principles. [Courses 9 and 10 alternate with course 8, and will not be given in 1898-99.]

3 hrs., 2d semester. (FAIRCLOUGH.)

11. **Bucolic Poetry.**—The Idylls of Theocritus and the Eclogues of Vergil will be read together and interpreted. The course will include also Bion and Moschus. Lectures and recitations.

2 hrs., both semesters. (MILLER.)

12. **Classical Mythology.**—A study of the Greek and Roman myths by means of ancient sculptures and vase-paintings. Lectures and recitations. [Course 12 will not be given in 1898-99.]

2 hrs., 1st semester. (MILLER.)

13. **History of Greek Sculpture.**—From the earliest times down to the time of Alexander. Lectures and recitations. [Course 13 will not be given in 1898-99.]

2 hrs., 2d semester. (MILLER.)

GRADUATE COURSES.

14. **The Greek Seminary.**—In 1898-99 the Seminary will be occupied with the study of Theocritus, Bion, and Moschus. The critical studies undertaken will be accompanied by lectures on the Alexandrine Age and on the influence of Greek Bucolic Poetry on later literatures. [Students should provide themselves in advance with the edition of Fritzsche-Hiller (Leipzig, Teubner, 1881), and the text-edition of Ziegler (Tübingen, 1879). There is an edition with brief Latin notes by Paley (Cambridge, 1869), and

an English school edition by Kynaston (Oxford, 1892). All students should possess also a good annotated edition of Vergil's Eclogues.]

2 hrs., both semesters. (MURRAY.)

15. Lyric Poetry.—Lectures on the development of Greek and Latin lyric, accompanied by readings and interpretation on the part of the instructor. See Latin 20. Undergraduates may take this course by permission of the instructor.

2 hrs., 1st semester. (FAIRCLOUGH.)

SPECIAL LECTURES.

Throughout the year Professor Murray will give weekly lectures on Greek Epic and Dramatic Poetry. These lectures are intended for general literary students and do not presuppose a knowledge of Greek; they will not count as a part of the major work for students in Greek.

16. The Greek Epic. *1 hr., 1st semester.* (MURRAY.)

17. Greek Tragedy. *1 hr., 2d semester.* (MURRAY.)

LATIN.

UNDERGRADUATE COURSES.

1. Cicero and Vergil.—Cicero, five orations; Vergil, six books of the Æneid; exercises in Latin composition and sight reading. This course is planned for those who have passed in entrance subject 20. It is regarded as preparatory to the work required of major students in Latin.

5 hrs., both semesters. (DODGE.)

2. Cicero, Livy, and Terence.—Cicero, De Senectute; Livy, books XXI-II; Terence, Andria. Open to students who have passed in course 1, or in subject 21 of the entrance requirements. Three sections. In section I, intended for students whose major study is Latin (or Greek), it is proposed to give the thorough drill necessary as a basis for future classical study in the University. In sections II and III, intended for students whose major study is not the classics, the chief aim will be, after a hurried grammatical review, to gain as great facility as possible in reading Latin.

3 hrs., both semesters. (FAIRCLOUGH, DODGE.)

3. Translation at Sight, and Latin Composition.—This course is open to students who are taking course 2, and is required

of major students in Latin. Training in the rapid reading of Cicero's De Amicitia, Livy, book I, and Nepos will be given one hour a week; and the other hour will be devoted to Latin composition in connection with the Cicero and Livy of course 2, and to the study of the private life of the Romans in connection with the Terence.

2 hrs., both semesters. (MILLER, DODGE.)

4. **Horace and Tacitus.**—Selections from the Satires, Odes, and Epistles of Horace, and from the works of Tacitus. This course, open to those who have passed in course 2, will aim at giving a comprehensive view of these authors and their place in the literature. Attention will be directed especially to the style and subject matter, and to the literary history of the times.

3 hrs., both semesters. (MILLER, PEASE.)

5. **Translation at Sight and Latin Composition.**—This is open to students who have taken course 3. One hour a week the class will read selections from Cicero, Tacitus, and Pliny's Letters. Special effort will be made to get at the Roman point of view, and to grasp the meaning in the order of the Latin. The exercises for translation into Latin will be prepared to suit the needs of the class. Conversation and the writing of epistles in Latin will be made a feature of the course.

2 hrs., both semesters. (FAIRCLOUGH.)

6. **Latin Comedy.**—In this course the Menaechmi of Plautus will be studied with particular reference to the early forms, constructions, and metres; and that followed by the more rapid reading of the Captivi and Rudens of Plautus, and the Andria and Phormio of Terence. Considerable attention will be paid to a comparison between ancient and modern comedy, the development of Latin comedy, the early theatre, and the method of presenting a play.

3 hrs., 1st semester. (PEASE.)

7. **The Letters of Cicero.**—The aim will be to get a view of Cicero and his times from the original sources, to see some of the causes for the breaking down of the Republic, and to become familiar with official procedure in the judicial and legislative bodies. Special attention will be paid to the familiar style of the letters.

2 hrs., 2d semester. (MILLER.)

8. Catullus, Tibullus, and Propertius.—Selections from these authors will be studied, largely with reference to the thought and artistic form, and compared with similar poems of other writers. Other selections will be read in translation in order to gain a comprehensive view of their works as a whole.

2 hrs., 1st semester. (PEASE.)

9. Bucolic Poetry.—A study of Vergil in connection with his Greek models. [See Greek 11.]

2 hrs., 2d semester. (MILLER.)

10. Lucretius.—Selections from the De Rerum Natura will be read in Latin and the rest in translation, attention being paid to the philosophic thought and its poetic treatment. [Course 10, alternating with course 8, will not be given in 1898-99.]

2 hrs., 1st semester. (PEASE.)

11. Quintilian.—In connection with the study of the subject matter of books X and XII, considerable attention will be paid to literary criticism and to the history of Roman literature. [Course 11, alternating with course 9, will not be given in 1898-99.]

2 hrs., 2d semester. (FAIRCLOUGH.)

12. Roman Oratory.—An outline of Roman Oratory based on Cicero's De Oratore, and Tacitus' Dialogus de Oratoribus. Portions will be read in the Latin and the rest in the translation. [See course 13.]

2 hrs., 1st semester.

13. Roman Law.—The work will be based upon the Commentaries of Gaius. The course will also treat of the sources of Roman law, the process of reducing the law to a code, and of the various collections. Courses 12 and 13 are intended especially for students in law.

2 hrs., 2d semester. (FAIRCLOUGH.)

14. Teachers' Course.—This is a course of lectures and recitations intended for those who expect to engage at once in preparatory teaching. The lectures will treat of the aims and methods of teaching preparatory Latin, the books and other helps serviceable to teachers, and such practical subjects as pronunciation, sequence of tenses, indirect discourse, and the like. There will also be practice in writing Latin and in teaching. Portions of the authors suitable for preparatory work will be read in class, and the members will serve in turn as teachers under the

supervision of the instructor. Opportunity will also be given to visit preparatory classes in the vicinity, and reports of the observations will be presented by each member.

2 hrs., 2d semester. (PEASE.)

15. Monuments of Ancient Rome.—A rapid survey of the architectural growth and topography of the ancient city, including an account of the walls, streets, aqueducts, bridges, fora, temples, basilicas, theatres, amphitheatres, circuses, baths, arches, palaces, tenements, shops, columns, tombs, etc. All the references of importance in Latin and Greek literature throwing light upon the monuments will be presented to the class by the different members. Open to third and fourth year students and to graduates. [This course, alternating with course 14, will not be given in 1898-99.]

2 hrs., 1st semester. (PEASE.)

16. Classical Mythology.—[See under Greek 12.]

17. Latin Composition.—A course in the study of style with practice in translating and writing Latin at dictation. Open to third and fourth year students and to graduates.

2 hrs., both semesters. (PEASE.)

18. Thesis.—Advanced students who desire some training in the methods of original investigation, may, by permission, register for one or two hours of thesis work. Credit for such work will be granted on the completion of a satisfactory thesis in accordance with the requirements of the department. For certain subjects, such for instance as the literary history of a period, an examination, supplemented by a carefully prepared bibliography and syllabus may be substituted for the thesis.

GRADUATE COURSES.

19. Latin Seminary.—In 1898-99 the Seminary will be occupied with the study of Lyric Poetry. The meetings will be devoted to the interpretation of Catullus by the members in turn, and to the presentation of papers containing the results of their special investigations. [Students should provide themselves in advance with Schwabe's edition of Catullus (Berlin, 1886, M. 1.50), and also editions of the other Lyric Poets]

2 hrs., both semesters. (PEASE.)

20. Lyric Poetry.—Lectures on the development of Greek and Latin lyric, accompanied by readings and interpretation on the part of the instructor. [See Greek 15.]

2 hrs., 1st semester. (FAIRCLOUGH.)

21. Latin Grammar.

1 hr., 2d semester. (PEASE.)

22. A Journal Club, composed of the instructors and graduate students in the Classical Languages, will meet weekly for reports on articles of interest in the current periodicals and on new books that appear.

GERMANIC LANGUAGES.

Professors GOEBEL and GRIFFIN, Assistant Professor RENDTORFF, and Instructor SCHMIDT.

The aim of the elementary classes in this Department is to give the student a thorough knowledge of German grammar and to enable him to acquire facility in reading German. The more advanced classes take up the study of the poets and writers of the classical period, and it is intended to offer, by the reading and interpretation of these authors, an equivalent for the study of the ancient languages to those not taking Latin or Greek in their University course. The general responsibility for the work of the first and second years rests with Professor Griffin; that for the work in Literature and Philology, with Professor Goebel.

1. Elementary.—German Grammar and German Reader; German Composition; Novelletten; translation of easy prose and poetry. Course 1 is intended for those beginning the study of the language. The number of sections is limited to five: three five-hour sections and two three-hour sections. Students who have had training in Latin, and students who have some knowledge of German, but not sufficient to enable them to pass in entrance subject 19, will be admitted to the three-hour sections.

3 and 5 hrs, both semesters.

(GRIFFIN, RENDTORFF, SCHMIDT.)

2. Second-Year German.—Goetz von Berlichingen, Lessing's Prosa, and Wilhelm Tell. [In 1898-99 Maria Stuart and Goethe's Prosa.] Advanced grammar and composition, translation at

sight. Open to students who have completed course 1 or its equivalent, or who have received credit for entrance subject 19.

3 hrs., both semesters. (GRIFFIN, RENDTORFF, SCHMIDT.)

3. **Scientific German.**—The work in this course consists in the translation of monographs by such leading German scientists as Cohn, Müller, Weissmann, and Helmholtz. No student is advised to take this course who has not had at least two years of thorough preparation in literary German.

2 hrs., 1st semester. (GRIFFIN.)

4 **Historical German.**—This course consists of the rapid translation of modern historical and economic German. Essays published in current numbers of the Deutsche Rundschau and other leading German periodicals are studied. No student is advised to register for course 4 who has not had at least two years of literary German.

2 hrs., 2d semester. (GRIFFIN.)

5. **Third-Year German.**—*a.* Schiller's Wallenstein, with discussions and lectures. [In 1898-99 Schiller's Braut von Messina will be studied (first semester). *b.* Goethe's Iphigenie. [In 1898-99 Goethe's Hermann und Dorothea will be studied in connection with A. W. Schlegel's essay (second semester.) During both semesters one hour of this course will be devoted to the reading of literary, scientific, and historical prose.

3 hrs., both semesters. (RENDTORFF.)

5a. **Classical German Drama.**—Reading of the standard dramas by Lessing, Schiller, and Goethe. [In 1898-99 Lessing's Nathan der Weise and Schiller's Jungfrau von Orleans will be studied.]

2 hrs., both semesters. (GRIFFIN.)

6. **German Conversation and Rapid Reading.**—[This course will not be given in 1898-99.]

1 hr., both semesters. (RENDTORFF.)

7. **Modern German Novels.**—Cursory reading of standard novels by Scheffel, Freytag, P. Heyse, Gottfried Keller, Hans Hoffmann, Spielhagen, etc. Open to students who have completed course 2.

2 hrs., both semesters. (RENDTORFF.)

8. **Advanced German Composition.**—Translation of graded exercises covering the most important parts of German syntax.

Writing of essays in German. Open to students who have completed course 2 or course 3, or equivalents.

1 hr., both semesters. (RENDTORFF.)

9. **Deutsche Aufsätze und Stilübungen.**—Open to students who have completed course 8, or its equivalent.

1 hr., both semesters. (RENDTORFF.)

10. **Goethe.**—Goethe's Tasso, and miscellaneous critical essays in connection with the course on Poetics. [In 1898-99 Goethe's Faust, First and Second Parts, will be studied. Interpretation, with lectures on the development of the Faust-legend, the history of Goethe's Faust, and its philosophical and ethical ideas.]

2 hrs., both semesters. (GOEBEL.)

11. **History of German Literature.**—Lectures on the history of German literature in the 18th century, with parallel readings from Max Müller's German classics. [In 1898 99 lectures on the history of German literature from the earliest times to the Reformation.]

2 hrs., both semesters. (GOEBEL.)

12. **Poetics.**—Lectures on the psychology and æsthetics of poetry as the basis for literary criticism. Comparative study of the principle theories of lyric, epic, and dramatic poetry from Aristotle to the present time. This course is open to all students of literature.

2 hrs., 1st semester. (GOEBEL.)

13. **Thesis or Research Work.**—Major students in German who have completed a course of three years in German, will be given an additional hour of credit upon presenting a satisfactory thesis embodying the results of independent work in the history of German literature. Permission to register for thesis work must be obtained from the major professor.

GRADUATE COURSES.

The graduate courses in German, for which a thorough linguistic preparation is required, are intended especially for students who will make the teaching of German their later profession. Careful attention is given to the linguistic as well as to the literary training of the student, aiming at a comprehensive nsight into the historical growth of the Germanic languages and

literatures. The scientific methods of original and critical research are taught and practiced in the seminary. Such students as have given satisfactory proof of their ability as independent investigators will be admitted to the degree of Ph. D., after having presented a thesis containing a contribution to science, and having fulfilled the other requirements prescribed by the University.

The Hildebrand Library—The purchase by the University of the extensive library of the late Professor Hildebrand of Leipzig offers, on account of the rare completeness of the collection in all branches of Germanic philology and literature, extraordinary opportunities for graduate work in German.

14. Middle-High German.—Middle-High German Grammar, with readings from Weinhold's Lesebuch.

2 hrs., 1st semester. (GOEBEL.)

15. Walther von der Vogelweide. — Interpretation, with lectures on the life and times of Walther. [In 1898-99 the Nibelungenlied will be interpreted.]

2 hrs., 2d semester. (GOEBEL.)

16. Old-High German.—Old-High German Grammar, with readings from Braune's Lesebuch.

2 hrs., 1st semester. (GOEBEL.)

17. Denkmäler Deutscher Poesie und Prosa aus dem VIII-XII Jahrhundert.—Interpretation and lectures. (Müllenhoff-Scherer, 3d edition.) [Courses 16 and 17 will not be given in 1898-99.]

2 hrs., 2d semester. (GOEBEL.)

18. Old Norse.—Old Norse Grammar, with readings from Old-Norse prose texts.

2 hrs., 1st semester. (GOEBEL.)

19. Edda.—Interpretation of the heroic lays of the older Edda in connection with the course on the Nibelungenlied.

2 hrs., 2d semester. (GOEBEL.)

20. Gothic.—Gothic Grammar and interpretation of select passages from Wulfila.

2 hrs., 2d semester. (GOEBEL.)

21. Comparative German Grammer. — Lectures on the comparative grammar of the Old-Germanic dialects.

2 hrs., 2d semester. (GOEBEL.)

22. German Seminary.—In 1897-98 the work of the Seminary consisted of the study of the German Volkslied of the 15th and 16th centuries, and its influence on German Literature during the 18th century. [In 1898-99 a special study will be made of the writers known as Das Junge Deutschland, and their influence on German literature of the present century.]

2 hrs., both semesters. (GOEBEL.)

ROMANIC LANGUAGES.

Professor MATZKE, Assistant Professors DAVIDSON and JOHNSTON, and Assistant WRIGHT.

1. Elementary French.—Whitney's Practical French Grammar, Part I, with written exercises and systematic training in French pronunciation on the basis of Matzke's Primer of French Pronunciation; Grandgent's Materials for French Composition, Part I; Super's French Reader; Halévy, L'Abbé Constantin; Souvestre, Un Philosophe sous les toits. In this course the study of the language is taken up from the beginning. Stress is laid upon the acquisition, theoretical and practical, of a correct pronunciation, but no direct attempt is made to teach French conversation. The student's entire energy is concentrated upon the attainment of a full and accurate reading knowledge of the language, to which end grammar and composition are made systematically to contribute. Open to all, but students desiring to enter after the end of the second week will be admitted only upon special examination.

5 hrs., both semesters. (JOHNSTON, WRIGHT.)

2. Modern French.—*Novels:* George Sand, La Mare au Diable; Mérimée, Colomba. *Drama:* Racine, Esther; Hugo, Hernani; Augier, Le Gendre de Monsieur Poirier; Pailleron, Le Monde où l'on s'ennuie; De Banville, Gringoire; Meilhac et Halévy, L'Été de la Saint-Martin. *Contes:* Fontaine, Fleurs de France; *Poetry:* Bowen's Modern French Lyrics. *History of French Literature:* Duval, Histoire de la littérature française. *Grammar and Prose Composition:* Whitney's Practical French Grammar, Part II, with exercises in the translation of connected prose prepared by the instructor.

A course in reading and introduction to French literature. Systematic attention will be paid to syntax and idiom. One

recitation per week (the reading of modern comedies and poems) will be conducted in French, the texts read being interpreted in French, and instruction in conversation given. Open to students who have completed course 1, or who have received credit for entrance subject 18.

5 hrs., both semesters. (DAVIDSON.)

3. **Modern French.**—George Sand, La Mare au Diable; Mérimée, Colomba; Fontaine, Fleurs de France; Racine, Esther; Hugo, Hernani. Whitney's Practical French Grammar, Part II. This course is intended for students who wish to acquire a readier reading knowledge of French, but it does not admit to the more advanced courses in the department. Students who, having completed course 3, desire to register for course 4, may do so by taking in addition the two hours in course 2 which are not covered by course 3.

3 hrs., both semesters. (JOHNSTON.)

4. **Classical French.**—The class will begin with a study of French tragedy. There will be read Corneille's Cid, Horace, and Polyeucte, and Racine's Athalie, Phèdre, and Andromaque. When this has been completed, the class will take up Molière's Précieuses Ridicules, Le Bourgeois Gentilhomme, Le Tartufe, and L'Avare. Lectures on French Literature, mainly on the XVII century, with parallel readings from Aubert, Littérature française. Open to students who have completed course 2, or its equivalent.

3 hrs., both semesters. (MATZKE.)

5. **Literary Movements of the 19th Century.**—Lectures, supplemented by readings and reports by the members of the class. Students should provide themselves with Pellissier, Le mouvement littéraire au XIXe siècle (Paris, Hachette, 1889), Faguet, Études littéraires sur le dix-neuvième siècle (Paris, Lecène et Oudin, 1889), and Stapfer, Racine et Victor Hugo (Paris, Colin et Cie., 1890). Open to students who have completed course 4.

2 hrs, both semesters. (DAVIDSON.)

6. **Advanced Prose Composition.**—Squair and Cameron, Exercises in French Prose. Open to all students who have completed course 2 or 3.

1 hr., both semesters. (JOHNSTON.)

7. **French Conversation.**—Practical exercises in French

conversation, based on modern French texts. Open to students who have completed course 2, or its equivalent.

1 hr., both semesters. (DAVIDSON.)

8. Introduction to Old French.—Léon Gautier, La Chanson de Roland (Tours, Mame et Fils); Chrétien de Troyes, Yvain ou le Chevalier au Lyon (Halle, Niemeyer, 1891). Open to students who have completed course 4.

2 hrs., both semesters. (JOHNSTON.)

9. Elementary Spanish.—Manning's Practical Spanish Grammar; Matzke's First Spanish Readings; Tamayo y Baus, Un Drama Nuevo; Valdés, José. Open to students who have completed French course 1, or who have received credit for entrance subject 18.

3 hrs., both semesters. (DAVIDSON.)

10. Classical Spanish.—Cervantes, Don Quijote, Part I; Lope de Vega, La Estrella de Sevilla; Calderón, La Vida es Sueño; Moreto, El Desdén con el Desdén. Open to students who have completed course 9, or who have received credit for entrance subject 17.

2 hrs., both semesters. (DAVIDSON.)

11. Elementary Italian.—Grandgent, Italian Grammar and Italian Composition; Bowen's First Italian Readings; De Amicis, Cuore; Manzoni, I Promessi Sposi. Open to students who have completed French course 1, or who have received credit for entrance subject 18.

3 hrs., both semesters. (JOHNSTON.)

GRADUATE COURSES.

Courses of instruction for graduate students in Romanic philology and literature lead to the degrees of Master of Arts and Doctor of Philosophy, and are planned for the benefit of specialists, particularly of such as are looking forward to becoming college teachers of the Romanic languages. Admission to regular standing in this department presupposes an undergraduate curriculum of study which has included Latin and French, and has afforded proficiency in at least one of the principal languages of the Romanic group (French, Spanish, or Italian). In addition to this, a good reading knowledge of German (for purposes of advanced study) is requisite. In connection with their special

work, graduate students will be expected to take, under the advice of their professor, such undergraduate courses in the Romanic languages as may supplement their previous studies, and also such graduate courses in related departments as will serve to broaden their general acquaintance with philology and literature.

12. History of Old French Literature.—Lectures on the History and development of French Literature from the beginning to the end of the fifteenth century. The course will be a continuation of that given during the second semester of 1896-97, and will be concerned mainly with Lyric Poetry and the Drama

2 hrs., 1st semester. (MATZKE.)

13. French Historical Grammar.—Lectures on Old French phonology and morphology. Students should provide themselves with Schwan-Behrens, Grammatik des Altfranzösischen (3d edition Reisland, Leipzig, 1898), Suchier, Altfranzösische Grammatik (Halle, Niemeyer, 1893), Körting, Lateinisch-Romanisches Wörterbuch (Schöningh, Paderborn, 1891). One hour every week will be given up to practical philological exercises based on Suchier's edition of Aucassin et Nicolete (Paderborn, 1889).

3 hrs., both semesters. (MATZKE.)

14. Physiological Phonetics.—Lectures. Students will need Sievers, Grundzüge der Phonetik (Leipzig, 1885); Beyer, Französische Phonetik (Cöthen, 1888); Paul Passy, Les Sons du Fransais (Paris). [Course 14 will not be given in 1898-99.]

2 hrs., 1st semester. (MATZKE.)

15. History of French Versification.—Lectures.

1 hr., both semesters. (DAVIDSON.)

16. French Historical Syntax.—Lectures.

1 hr., both semesters. (JOHNSTON).

17. Old French Dialects.—Lectures on the Phonology and Morphology of the Old French Dialects with practical exercises on Old French Texts.

1 hr., both semesters. (MATZKE.)

18. Old Provencal. Translation of Old Provençal texts from Appel, Provenzalische Chrestomathie (Leipzig, Reisland, 1895).

2 hrs., 1st semester. (MATZKE.)

19. Old Spanish.—Old Spanish Grammar with readings from Gorra, Lingua e Letteratura Spagnuola delle origini (Hoepli, Milan, 1898).

2 hrs., 2d semester. (MATZKE.)

20. History of the Spanish Theater.—Lectures.

2 hrs., 2d semester. (MATZKE.)

21. Seminary.—In 1896-97 the seminary was occupied with the study of Corneille. The subjects investigated were the life and times of the great dramatist, the dramatic theories of the seventeenth century, and the sources and construction of his plays. In 1898-99 the work of the seminary will be centered in the study of the Anglonorman Dialect.

2 hrs., both semesters. (MATZKE.)

ENGLISH LITERATURE AND LANGUAGE.

Professors ANDERSON, FLÜGEL, HUDSON, and LATHROP, Associate Professor NEWCOMER, Instructors HARDY and PEARSON, and Assistants MCLEAN and BRIGGS.

The courses in English are divided into two classes: (1) courses which have a general value in affording discipline and culture; (2) courses which are designed for professional students of language and literature, and from which the hours required for graduation in English must be selected.

The objects of the general courses (3, 4, 5, 6, 8, 9) are stated in detail in the list of courses. These are not to be counted as a part of the major work required for graduation in English.

The courses in literature treat the subject from two points of view. First, the works studied are regarded as significant primarily because of their appeal to permanent interests of human nature, and as therefore deserving to be interpreted for their own sake. Secondly, the authors dealt with are considered in relation to the general movements of thought and feeling in their own and other ages, the history of literature being treated as a part of universal history.

Philology is conceived of in the courses devoted to it as the attempt to recreate the inner life of the past from the evidence afforded by language. It is believed that some study of language in this spirit is requisite for the complete training of a student of literature.

For graduation in English twenty-five hours of work in the department are required. Students who make English their major subject are expected to be able before graduation to read simple prose and verse in any three of the six languages: Greek, Latin, German, French, Italian, Spanish. (The facility required to pass in entrance subjects 17, 18, 19, 20 21, 22 is the standard.) They must have such a general knowledge of the history of English literature as may be gained from course 10. Besides this, a student graduated in English is required to have a knowledge of the main facts of the history of the English language, such as may be gained from course 22.

UNDERGRADUATE COURSES.

3. **Introduction to English Prose.**—Courses 3 and 4 are intended to give students a feeling for the elements of good prose style by disciplining them in the exact study of words, in the analysis of structure, and in the application of the fundamental principles of rhetoric, and by training them in the rapid, accurate, and sympathetic reading of prose.

3 hrs., 1st semester. (NEWCOMER.)

4. **Introduction to English Prose.**—[Course 4 will not be given in 1898-99.]

3 hrs., 2d semster. (NEWCOMER.)

5. **Introduction to English Poetry.**—Course 5 is meant to acquaint students with the elements of poetic form, and to help them to an intelligent interest in poetry. [Text-book: Stedman's Victorian Anthology.]

3 hrs., 2d semester. (NEWCOMER.)

6. **Elocution.**—An elementary course in elocution, including both the physical and the intellectual training requisite for effective reading and speaking.

5 hrs., both semesters. (LATHROP.)

7. **Teachers' Course in English Composition.**—[Course 7 alternates with course 21, and will not be given in 1898-99.

2 hrs., both semesters. (HARDY, PEARSON.)

8. **English Composition.**—Course 8 gives elementary training in narration, description, and exposition. Practice in taking notes and in making syllabi and abstracts forms a part of the course, the object of which is to develop habits of observation and

accuracy of thought, as well as the power of expression. [Either the Standard Dictionary or Webster's International Dictionary.]

2 hrs., both semesters. (LATHROP, HARDY, PEARSON, MCLEAN.)

9. **Forensics.**—The object of course 9 is not so much to form a part of professional training as to provide an important element in liberal culture. The literary side of argument receives as much attention as is given to the logical and technical side. Students must obtain the instructor's permission before registering for this course.

2 hrs., both semesters. (LATHROP.)

10. **The History of English Literature.**—A course of lectures, giving a general view of the history of English literature. This course is intended primarily for advanced students of English, but is open to others who may satisfy the instructors of their fitness.

2 hrs , both semesters. (ANDERSON, FLÜGEL, HUDSON, LATHROP, NEWCOMER.)

11. **English Composition.**—An advanced course, with special reference to the philosophy of style and its practical application to various forms of literary art. Students must obtain the instructor's permission before registering for this course.

2 hrs., 1st semester. (NEWCOMER.)

12. **Essayists of the Nineteenth Century.**—A study of the modern essay in its various aspects, based upon representative selections from Macaulay, Carlyle, Emerson, Ruskin, Arnold, Lowell, Pater, Stevenson, and Huxley.

2 hrs , both semesters. (NEWCOMER.)

15. **Shakspere and his Contemporaries.**—A general introduction to the study of Shakspere and of the literature of his age. Intended primarily for students of English in the second and third years, but open to students of all departments who may satisfy the instructor of their fitness. [Saintsbury's "Elizabethan Literature," the "Temple Dramatists," and the "Temple Shakespeare."]

2 hrs , 1st semester. (ANDERSON.)

16. **Characteristics of Shakspere.**—A comprehensive survey of all the works ascribed to Shakspere, with a view to the

illustration of the grounds of his literary supremacy. Open to students who have had course 15, or its equivalent.

2 hrs., 2d semester. (ANDERSON.)

17. Spenser—A critical examination of his works, with a study of his character, of the esthetic and moral qualities of his poetry, and of his relative position in the history of literature. Students should consult the instructor before registering for the course. [Spenser's Works, Globe edition.]

2 hrs., 2d semester. (NEWCOMER.)

18. The Literature of the Eighteenth Century. — A comparative study of the literature of the Augustan period, and the early romantic revival. Open to those only who are familiar with either French or German. [Ward's English Poets, vol. III; the works of Dryden, Pope, Goldsmith, Cowper, in Macmillan's Globe edition. Editions of other eighteenth century authors, English and continental, in Cassell's National Library, and other inexpensive reprints, will also be used.] [Course 18 will not be given in 1898-99.]

3 hrs., both semesters. (HUDSON.)

19. English and American Poetry of the Nineteenth Century.—From Keats to Tennyson and Whitman. [Students must provide themselves with good editions of the works of Keats, D. G. Rossetti, Arnold, Clough, George Eliot, Tennyson, William Watson, Lowell, Emerson, and Whitman. Morris's Earthly Paradise should also be obtained, either complete or in selections.] [Course 19 will not be given in 1898-99.]

3 hrs., both semesters. (HUDSON.)

20. Thesis—In certain courses, students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the result of independent work. Permission to register for thesis work must be obtained in each case from the major professor.

1 hr., either or both semesters.

21. American Literature.—A survey of American literary history, and the reading and discussion of notable works in prose and verse. Students in this course are expected to possess the works of the chief American poets, especially Bryant, Poe, Longfellow, Whittier, Emerson, Lowell, Whitman, and Lanier. [Course 21 alternates with course 7, and will be given in 1898-99.]

3 hrs., both semesters. (HARDY.)

22. Anglo-Saxon.—*a*. Anglo-Saxon Grammar and translation of select passages in prose and verse (first semester). *b*. Introduction to the study of Anglo-Saxon literature and Outline of Historical English Grammar (second semester). *b* is a continuation of *a*, but is open to all students who have satisfied the instructors of their fitness. For both *a* and *b* some knowledge of either German or Latin is a prerequisite.

3 hrs., both semesters. (FLÜGEL, BRIGGS.)

23. Chaucer.—This course is an elementary one, and includes an outline of Middle English Grammar for the beginner; it is open to students who have taken course 22 and English History (course 12, or its equivalent). Students having completed this course will be admitted in the second semester to the advanced course in Chaucer (33*a*).

2 hrs., 1st semester. (FLÜGEL.)

24. Wordsworth and his Contemporaries.—This course is intended to cultivate a catholic appreciation of the poetry of Wordsworth, Coleridge, Byron, Shelley, and Keats. Many of the more notable works of these poets are read; their biographies are studied for light upon their art and thought; and the great social and literary movement which they exemplify and interpret is discussed. Open to the more advanced undergraduate students of all departments. [Macmillan's Globe editions of Wordsworth, Shelley, and Coleridge.]

3 hrs., 1st semester. (ANDERSON.)

25. Browning and Tennyson.—A study of the respective artistic methods of these poets, and a discussion of their philosophy of life. This course is in some sense a continuation of course 24, and is open to the same class of students. [The Globe edition of Tennyson, and the Riverside edition of Browning.]

3 hrs., 2d semester. (ANDERSON.)

26. Milton.—A critical examination of the poems and of some of the prose works of John Milton, and a study of his life and times with a view to the realization of his character, a comprehension of his historical importance, and an appreciation of the classical quality of his poetry. [Masson's smaller edition of Milton's Poems (three vols.), either Pattison's or Garnett's or Stopford Brooke's account of Milton's life and works, Hales's edition of the Areopagitica, and Verity's annotated texts

(Cambridge Press.) [Course 26 alternates with courses 24 and 25, and will not be given in 1898-99.]

3 hrs, both semesters. (ANDERSON.)

27. Shakspere.—A study of some fifteen of the plays, so selected as to illustrate the author's range and the variations of his art in the successive periods of his life. The selection of plays is changed from year to year. This course is intended primarily for the more advanced students in the English Department, but is open to others who may satisfy the instructor of their fitness. Dowden's Primer of Shakspere, the "Temple" edition of the several plays, and at least one volume of Furness's Variorum edition.]

3 hrs., both semesters. (ANDERSON.)

GRADUATE COURSES.

In connection with the following courses, opportunity will be afforded to graduate students to pursue lines of reading and investigation under the guidance of the professors. The courses offered lead to the Doctor's degree, but the specific requirements for the degree must vary with every individual. In no case will the degree be conferred except upon the completion of a thesis embodying the results of original work of a high order. More definite information will be furnished by the members of the English staff to intending students who write giving the necessary information respecting their purposes and equipment.

28. History of English Lyrical Poetry, from the Earliest Times to the Middle of the Sixteenth Century.—Lectures and interpretations. [Course 28 will not be given in 1898-99.]

2 hrs., both semesters. (FLÜGEL.)

29. a. History of Old and Middle English Literature. b. Historical Grammar of the English Language.—The period covered is that from the Norman Conquest to the Middle of the Sixteenth Century. [Course 29*b* will not be given in 1898-99.]

2 hrs., 1st semester. (FLÜGEL.)

30. Beowulf.—A reading knowledge of German is a prerequisite for this course.

2 hrs., 2d semester. (FLÜGEL.)

31. English Palæography.—Lectures and exercises.

2 hrs., 2d semester. (FLÜGEL.)

32. History of the Beginnings of Modern English Literature.—From Caxton to Tottel.

2 hrs., 1st semester. (FLÜGEL.)

33. English Seminary.

a. Chaucer.—This course will be devoted to a careful study of some of Chaucer's works, their sources and texts.

2 hrs , 2d semester. (FLÜGEL.)

b. Shakspere: An Introduction to Textual Criticism.—Exact reprints of the quarto and folio texts of a few selected plays are collated, textual obscurities and verbal difficulties are carefully discussed, and a complete edition of one play is constructed by each student from the original versions. Following upon the textual study of each play is a discussion of the *dramatis personæ*, an analysis of the author's dramatic methods, and an examination of various elements of his literary power. Open to students who have completed course 27 or its equivalent. [The necessary books are Vietor's parallel-text reprints of Hamlet and Lear, and Furness's Variorum edition of the plays studied.

2 or 3 hrs., both semesters. (ANDERSON.)

c. The Early English Romantic Movement.—This course will be devoted to an investigation of the growth of Romanticism in English Poetry from the time of Pope to the publication of the Lyrical Ballads (1798). [Course 33*c* will not be given in 1898-99.]

2 hrs., both semesters. (HUDSON.)

d. Tennyson.—This course is devoted to a comprehensive study of the entire body of Tennyson's works. Among the principal subjects considered are the characteristics of his genius and art; the fundamentals of his ethical, social, and religious teaching; his relation to the contemporary movements in life and thought; his indebtedness to preceding poets, classical and modern; and his influence, spiritual and technical, upon his age. [Course 33 *d* will not be given in 1898-99.]

2 hrs., both semesters. (HUDSON.)

BIBLIOGRAPHY.

1. General Bibliography.—The aim of this course is to give practical aid to students in the preparation of bibliographies. Bibliographical method, the bibliographies of special subjects,

and the principal books of reference will be discussed and individual work carried out under direction in the University Library.

2 hrs., 1st semester. (TEGGART.)

PSYCHOLOGY.

Professor ANGELL.

1. General Psychology.—Recitations and Lectures. Course 1 may be taken with or without laboratory work.

3 hrs., both semesters. (ANGELL.)

2. Beginner's Laboratory Work.

1 hr., both semesters. (ANGELL.)

3. Advanced Psychology.—The Will. Lectures and preparation of abstracts and essays. Open to those who have completed course 1 or its equivalent.

2 hrs., both semesters. (ANGELL.)

4. Laboratory Work in Psychology.—In connection with course 3.

3 hrs. (minimum), both semesters. (ANGELL.)

5. Methods of Sensation Measurement.—During the second semester the course discusses statistical methods so far as is possible without the aid of the higher mathematics. Course 5 takes up practically the methodology of Psychology.

1 hr., both semesters. (ANGELL.)

[Course 1 is based mostly on experimental work in Psychology during the last ten years. Each hour of laboratory work (courses 2 and 3) usually requires from one to two hours additional spent in preparing materials and apparatus and in collating results.]

BIONOMICS.

President JORDAN, and Professor THOBURN.

It is the purpose of this Department to study the laws of life relating to habits, heredity, and adaptation. The courses are arranged to present, *first*, a conception of organic evolution, its chief factors and relations, and its historical development;

second, the application of the principle of growth and adaptation to various branches of human activity, such as individual development and social and religious life.

It is believed that an inductive study of human life furnishes the basis for determining duty and responsibility. Students who are preparing for settlement work, the ministry, or for related lines of activity will be received as majors in this department. These are required to take, in addition to the courses named below, a certain amount of work in the Zoological or Physiological laboratories and designated courses in Sociology, Psychology, and Hygiene.

Instructors from other departments will give special lectures in illustration of subjects discussed in courses 1 and 2.

1. **Organic Life.**—Lectures on the laws of life, the chief factors in organic evolution, and the origin of species. Papers are required on the various topics discussed, with a study of the literature relating to the subject. Not open to first year students.

3 hrs., 1st semester. (JORDAN, THOBURN.)

2. **Social Evolution.**—The application of the laws of life to the growth of the individual man and to the problems of social evolution. Lectures and assigned readings. Open to students who have had course 1.

3 hrs., 2d semester. (JORDAN, THOBURN.)

3. **Religion.**—*a.* A study of the nature of religion, the laws that govern its growth, and the function of religious beliefs in the evolution of society. *b.* The religious forces of the United States. Lectures and assigned readings with class discussions.

3 hrs, 2d semester. (THOBURN.)

4. **Life and Teachings of Christ.**—The history of the life and period of Jesus, with a study of his words and the application of the principles of his teaching to the life of to-day. Lectures, discussions, and papers, with an actual study of the religious forces in modern society. Open either semester.

2 hrs., both semesters. (THOBURN.)

5. **Thesis.**—In courses 1, 2, and 3 an additional hour of credit will be given on presentation of a satisfactory thesis. In course 3 this thesis must embody the results of independent work. Permission to register for thesis work must be obtained from the major professor at the beginning of each semester.

1 hr., both semesters. (THOBURN.)

EDUCATION.

Professor GRIGGS,* Assistant Professors CUBBERLEY and STARBUCK, and Instructors SCHALLENBERGER and PARSONS.

The scientific aim of this Department is the study of the higher human life in its intellectual, aesthetic, and ethical activities and expressions, in their development in both the individual and the race. The practical aim is the training of teachers. As the study of humanity is the natural basis of the work of the teacher the two aims are organically united in the work of the department. As an appreciation of the human spirit in its higher expressions is the essential element in that liberal education which is the basis at once of the art of living and of all higher vocations, this department stands centrally for such culture in the work of the university. The art of living and the art of teaching alike rest upon a basis of exact science, and upon the practical insight or wisdom which is knowledge converted into life, and which makes possible an appreciation of concrete human problems and relations. It is a constant purpose in certain courses of the department to develop as much as may be of such practical wisdom as well as to give definite scientific training.

The study of the interpretations of life given in systems of philosophy becomes fruitful in proportion as these are regarded not as *a priori* statements of truth, but as highly organized results of the activity of the human spirit, to be interpreted only in connection with the general development of the latter. The history of conduct and ideals and the history of the human intellect become then mutually interpretative lines of study, and are so regarded in the work of the department.

The spirit and methods of the work are those which have been successfully employed in all fields of physical science. At the same time it is recognized that the study of humanity is not made scientific by transferring into that field the results of other sciences. A new province of work presents its own problems and requires special methods. To understand the higher human life it is not enough to study its sources in the physical world below man; but the facts in the world of human thought,

*Professor Griggs will have leave of absence from the University from January 1, 1899, to January 1, 1900; his courses scheduled for the first semester will be given during 1898-99, and those scheduled for the second semester will be given in 1899-1900.

emotion, and will must themselves be studied in the light of all that can be learned of their origin and development.

In the more strictly professional courses attention is focused upon practical training for the vocation of teaching in all its branches.

In the advanced courses attention is especially directed to training students in original research, and thus to developing sound and independent scholarship.

1. Introduction to the Study of Humanity.—A discussion of the application of scientific methods to the study of human life. A review of the present condition of the humanistic sciences will be given, together with a discussion of the peculiar difficulties and problems involved here as compared with the field of the physical sciences. Lectures and assigned reading.

2 hrs., 1st semester. (GRIGGS.)

2. Personal Life.—A discussion of the more important ethical and educational problems in the life and development of the individual. The questions considered include: The Nature of Personal Life, The Relation of Personal Ideals to Social Movements, Self-Culture, The Vocation, The Ethics of the Personal Relations, The Use of Culture Opportunities.

2 hrs., 2d Semester. (GRIGGS.)

3. Moral Education.—A study of the ideal of character development and of the forces leading to its attainment. Lectures and assigned reading in educational literature. The subjects considered will include: Positive and Negative Moral Education, Moral Education through Institutional Environment, The Ethics of School Organization, The Influence of the Parent and Teacher in Moral Education, Direct and Indirect Ethical Instruction.

2 hrs., 1st semester. (GRIGGS.)

4. The History of the Scientific Spirit.—A study of the development of the methods by which the human intellect has endeavored to understand nature and humanity. In the latter portion of the course lectures will be given by professors in various departments on the present methods of science in its different branches. [Courses 3 and 4 will be given in alternate years with courses 1 and 2. Course 3 will be given in the first semester of 1898-99, and Course 4 will be given in the second semester of 1899-1900.]

2 hrs., 2d semester. (GRIGGS.)

5. History of Philosophy.—A general outline of the development of philosophical thought in Europe with special reference to the work of the great thinkers. The course aims to fill the place of an introduction to philosophy by a careful study of the chief problems at their origin; and attention is given throughout to contemporary social and political conditions. Lectures and class discussions, together with study of the histories and such reading of selections as time will permit.

2 hrs., both semesters. (PARSONS.)

6. The Psychology of Childhood.—The aim of this course is to put students in line with the results of the study of childhood and youth. It will call out and emphasize those aspects of the subject which seem sound from a scientific standpoint, and those which are especially significant in their bearing on the work of teaching. The course will include a history of "child study" and a criticism of its methods.

3 hrs., both semesters. (STARBUCK.)

7. The Theory and Practice of Teaching.—Lectures, assigned reading, and reports. An application of pedagogical principles to the work of the teacher. The work will consist of an examination of the subjects taught in elementary and secondary schools; the relation, relative value, and pedagogical basis of the different subjects; methods of teaching; good and bad teaching compared; school management; requisites of teachers in elementary and secondary schools; secondary education in its different phases; the ruling idea and courses of study in each; relation of the high school to the elementary school and to the university; and a critical examination of different courses of study. This course should be taken by undergraduates who expect to teach in the schools of the State. Open to all students.

3 hrs., both semesters. (CUBBERLEY.)

8. Methods of Teaching.—This course will deal with the subject matter and methods of teaching the various subjects of the school curriculum. It will consider the historical development of method and the evolution of the school curriculum; the influence upon methods of experienced teachers, of child-study, of society. Such questions as the following will be raised: What is a good method? Upon what basis should a method rest? How shall the best methods be put into use? The separate subjects taught in the schools will be discussed as to their

educational values according to the ways in which they are taught. The course will undertake to acquaint teachers with the current methods of teaching, to lead them to form intelligent opinions about them, and to formulate methods of their own. Open to students who have had Course 7 or who are otherwise prepared for the work.

2 hrs., both semesters. (SCHALLENBERGER.)

9. Educational Classics and the History of Pedagogy.—Assigned reading and occasional lectures, with a critical study of the great classics of educational literature from the time of the Renaissance to the present. Emphasis will be placed upon the sources from which the writers drew their inspiration, the educational ideas advanced, and the extent to which these have been incorporated in the pedagogy of to-day. This course will include selections from the writings of Erasmus, Luther, and Rabelais; Montaigne's Instruction of Children; selections from Aschem's Scholemaster and Bacon's Novum Organum and The Advancement of Learning; Comenius' School of Infancy; Milton's Tractate on Education; Locke's Thoughts on Education; Fenelon's Education of Girls; Rousseau's Emile; Pestalozzi's Leonard and Gertrude; Froebel's Education of Man; Herbart's Science of Education; and Spencer's Education. Open to second, third, and fourth year students, and to first year students who have had experience in teaching.

3 hrs., both semesters. (CUBBERLEY.)

10. Educational Psychology.—This course will view some of the problems of education and the practice of teaching in the light of the well established laws of experimental psychology and the physiology of the nervous system. The finer anatomy of the nervous system, the psychology of habit, memory, association, imagination, the senses, attention, apperception, instinct, the emotions, and fatigue will be focused on educational theory and practice. Open only to advanced students.

2 hrs., both semesters. (STARBUCK.)

11. Dante and the Mediæval Ideal.—A study of the "Divine Comedy" as the best expression of the spirit of the Middle Ages and as one of the most significant of the efforts to see human life "under the aspect of eternity." Open to third and fourth year students and graduates, and to others who have sufficient maturity to deal with the problems taken up in the work.

2 hrs., 1st semester. (GRIGGS.)

12. Goethe and the Spirit of Modern Culture.—This course will center upon the study of Goethe's "Faust" in its two aspects; (1) as perhaps the best expression of the characteristically modern problems, (2) as presenting the more universal human problems which are constantly recurring in all epochs of life. Open to third and fourth year students and graduates, and to others who have sufficient maturity to deal with the problems taken up in the work. *2 hrs., 2d semester.* (GRIGGS.)

13. Methods of Teaching Science in Elementary and Secondary Schools.—About five practical exercises in each of the following subjects: Chemistry, Physics, Mineralogy, Astronomy, Physical Geography, Botany, Zoology, and Physiology. This course will show methods of presenting these subjects in primary, grammar, and high schools, and will point out the kind of work to be done, the literature of the subject, and where to get materials. Instructors in the different departments represented will be invited to lecture upon their special lines of work. *2 hrs., 1st semester.* (CUBBERLEY.)

14. The Organization and Supervision of School Systems.—Lectures and assigned reading, embracing the organization and supervision of schools in towns, cities, counties, and states; suburban and city schools; high schools; polytechnic schools; normal schools; arrangement of courses of study; plans of grading and promotions; inspection and management; employment and dismissal of teachers; duties of principals and superintendents, and their relation to the schools and to the public; relation of the superintendent to intellectual and moral training, to discipline, and to the community; agencies for helping teachers; defects to be remedied and problems to be solved. This course is intended for those who wish to prepare for the position of principal or superintendent, and will not be open to those who have not had at least one year's work in the Department. *2 hrs., 2d semester.* (CUBBERLEY.)

15. An Ethical and Educational Study of Autobiography.—A study of the more permanent questions in the life and development of the individual, as presented in revelations of personal experience. The Autobiographies of Goethe, Benvenuto Cellini, Tolstoi, Amiel, Mill, Marie Bashkirtseff, and others are read and discussed. Additional autobiographies are assigned for independent study, and reports expected upon them. An effort is made to cover, in the whole of the work, a wide range of

vocational activities, and a considerable variety of types of men and of experience. Open to third and fourth year students and graduates, and to others who have had considerable experience in teaching. *3 hrs., both semesters.* (GRIGGS.)

16. The Ethical Activities of Childhood.—A study of autobiographical and biographical records of children, and of other available data in connection with their moral activities. Open only to students who have had course 6, or 7, or 10, or an equivalent. [Course 16 will be given in alternate years with course 15. Course 15 will be given during the first semester of 1898-99; Course 16 will be given during the second semester of 1899 1900.] *3 hrs, both semesters.* (GRIGGS.)

17. Seminary in the History of Philosophy.—During 1897-98 the work has been in Locke, Hume, and Kant. During 1898-99 the post-Kantian German philosophy will be studied (chiefly Fichte, Hegel, and Schopenhauer). The aim of the Seminary work is to furnish a training in critical thinking as well as a thorough mastery of such works as may be read. Reading and analysis of the text with papers on special subjects. Open to students who have taken course 5, and to others showing sufficient qualification, at the discretion of the instructor.
2 hrs., both semesters. (PARSONS.)

18. Seminary in the Psychology and Pedagogy of Religion.—Open only to advanced students. Intended primarily for research work in the genetic aspects of morals and religion and in the bearing of the laws thus discovered upon educational methods. *3 hrs., both semesters.* (STARBUCK.)

19. Seminary in the Statistical Study of School Systems.—A study in interpretation. Assigned reading and graphic representation of results. A statistical study of the school systems of the United States and Europe. The course will include such subjects as enrollment and attendance; comparative expenditure and cost; illiteracy, pauperism, and crime; relation of race and nationality to education; public and private schools; rural and city schools; growth of secondary and higher education; education of women; technical schools; normal schools; etc. The course will embrace a study not only of present conditions and tendencies, but also the historical development and possible future of the schools. Open only to advanced students.
2 hrs., both semesters. (CUBBERLEY.)

20. Seminary in the History of Morals.—Devoted to special researches in the history of conduct and ideals. The work for 1898-99 will be given to the History of Morals in the Italian Renaissance. The type of life and ideal of life in Italy during the period will be studied in characteristic expressions in conduct, religion, social relations and institutions, philosophy, and the fine arts. Each student will be assigned one main subject for exhaustive study, the results to be reported to the Seminary and discussed at length. Special appointments will be made with each student in the Seminary for conferences over his own independent work. Open to fourth year students and graduates, and to others who have had considerable training and experience in doing independent work in the humanistic sciences.

3 hrs., both semesters. (GRIGGS.)

21. Seminary in Ethical and Educational Theory.—The comparative study of a number of typical modern theories. Open to fourth year students and graduates, and to others who have special preparation for the work. Course 5 or its equivalent is pre-supposed for all students taking the work. [Courses 20 and 21 are given in alternate years. Course 20 will be given the first semester of 1898-99, and Course 21 will be given the second semester of 1899-1900.]

3 hrs., both semesters. (GRIGGS.)

[**22. Education and Society.**—See course 11 in Economics.]

[**23. School Hygiene, Anthropometry, and Physical Training.**—See course 4 in Department of Hygiene and Organic Training.]

[**24. Teachers' Course in Latin.**—See course 14 in Latin.]

[**25. Teachers' Course in English.**—See course 7 in English.]

[**26. Teachers' Course in Physics.**—See course *c* in Physics.]

Under the present ruling of the State Board of Education graduates of this University who are recommended by the Faculty, and who have had professional training equivalent to that required by the State University, may receive certificates to teach in California without examination. To receive this recommendation students must invariably have had not less than twelve hours work in the Department of Education exclusive of courses 1, 4, 5 11, 12, 17, 18, 20. All students intending to prepare

mselves for such certificates are expected to take course 7 or 8 as part of the twelve hours.

Major students in the department are expected to have, early in their course, a thorough reading knowledge of at least one modern language, and at least a year's laboratory work in one of the more exact physical sciences.

Teachers not candidates for a degree, but wishing to carry on special studies in the department, will be given every assistance which the department can offer.

HISTORY.

Professors HOWARD and SHOW, and Assistant Professors SPENCER, KRIEHN, and DUNIWAY.

1. **Roman Institutions.**—From the earliest times to the end of the middle empire (A. D. 284.) Course 1 is primarily a study of political and social institutions, and assumes some knowledge of the general history of Rome. It is designed to afford a general training in scientific method. The students are guided in the systematic use of books. Class work consists of lectures by the instructor, special reports, and written exercises by the students. All students in the course having History for the major subject are expected to register for course 20. [Course 1 will not be given in 1898-99.]

3 hrs., both semesters. (SHOW.)

2. **Early Mediæval Institutions.**—Open to all who have taken course 1 or an equivalent. Course 2 covers the period from the fourth to the tenth century (A. D. 284-888), ending with the overthrow of the Carolingian monarchy. Beginning with the organization of the later Roman Empire, it traces the main development of primitive Germanic institutions, the rise of the mediæval church, the expansion of the Frankish empire, the beginning of feudalism, and the foundation of the great mediæval states. The methods of instruction are the same as in course 1. Ability to use German and French books, though not required, is of great service in this course.

3 hrs., both semesters. (SHOW.)

3. **History of the Later Middle Ages.**—A continuation of course 2, with which it alternates; open on the same conditions.

Among the subjects treated will be the Holy Roman Empire, the great conflict between church and state, the crusades, and the beginnings of the modern states. Attention will also be devoted to the artistic development of the period, notably architecture and painting. [Course 3 will not be given in 1898-99.]

2 hrs., both semesters. (KRIEHN.)

4. **History of Europe in the Nineteenth Century.**—This course deals primarily with the social and political development of Europe, but includes also the study of the commercial and colonial expansion, and of the international questions involved.

3 hrs., both semesters. (SPENCER.)

5. **Church and State in the Middle Ages.**—Course 5 is open to graduates and undergraduates who have taken course 2 or its equivalent. It considers the relations of the early church to the pagan and Christian empires, the rise of the papacy, the foundation of the temporal power, the theory of the Holy Roman Empire, the conflicts of the church and civil power, and similar topics. After the ninth century, special stress is laid on the relations of the papacy to the German empire. Students are guided in research work on selected topics. [Course 5 will not be given in 1898-99.]

2 hrs., both semesters. (SHOW.)

6. **History of the Italian Renaissance.**—Course 6 is designed to give training both in history and in the principles of art criticism. Due consideration will be given to the political, constitutional, and economic conditions of the period, and to the revival of literature and learning which preceded the artistic development. The lives and characteristics of the chief masters of the Italian Renaissance will be especially considered; their works will be studied, as far as possible, from photographs of the originals. A sketch of the spread and development of the Renaissance in other countries of Europe will be subjoined to the course. Open to all third and fourth year and graduate students; to others on consultation with the instructor.

2 hrs., both semesters. (KRIEHN.)

7. **American Colonial History.**—Course 7 is open to graduates, and to undergraduates who have had either course 1 or course 13 or an equivalent. It should precede course 8 as an introductory course. The expansion of Europe in American exploration, commerce, and settlement, receives systematic

treatment. Special attention is given to the constitutional development of the English colonies.

2 hrs., both semesters. (DUNIWAY.)

8. Constitutional and Political History of the United States since 1775.—Course 8 is open to graduates and to undergraduates who have had courses 1 and 2, or their equivalent, It should, when practicable, be preceded by course 7. It is a study of the Revolution, the Critical Period, and the formation and development of the National Constitution. This course is important for the study of law.

3 hrs., both semesters. (HOWARD.)

9. History of the English Constitution to 1485.—Course 9 is open to graduates and advanced undergraduates. It is designed to afford a detailed study of the origin and development of English institutions, local and national, to the end of the Middle Ages. This course is especially important as a preparation for the study of law.

2 hrs., both semesters. (HOWARD.)

10. History of the English Constitution since Henry VII.—Course 10 alternates with course 9, and is open to graduates and to advanced undergraduates. It is designed to afford a detailed study of the growth of the English Parliament and the Cabinet system. Particular attention is given to the constitutional results of the Puritan Revolution and to the existing forms of local government and administration. This course is also important as a preparation for the study of law. [Course 10 will not be given in 1898-99.]

2 hrs., both semesters. (HOWARD.)

11. The French Revolution.—With special reference to its causes and its constitutional experiments. Open to students having a fair knowledge of general European history.

2 hrs., both semesters. (HOWARD.)

12. General History.—Open to all students. Course 12 is intended as an introduction to the further study of history, and to give general training to students lacking time for more specialized work. It will cover the general ground of ancient, mediæval, and modern history. While the various phases of historical development will always be considered, the emphasis will be placed on that element which was the chief contribution of the

nation to human progress: e. g. the aesthetic in Greece, the legal and constitutional in Rome, the religious in the Middle Ages. Special attention will be devoted to the needs of high schools.

4 hrs., both semesters. (KRIEHN.)

13. History of England since 1485.—The aim is to trace political and social development. The internal history of the country is traced, but the chief point of view in the last two centuries is the industrial and colonial expansion, and thus the subject is studied in its European and American relations. Course 13 is open to all students, but is specially adapted for a first year course.

2 hrs., both semesters. (SPENCER.)

14. History of the Protestant Reformation.—This course begins with the study of the fundamental principles of the Reformation, especially as seen in Luther, Zwingli, and Calvin. The origin, principles, and growth of the various sects within Protestantism are traced. Special attention is paid to the Counter-Reformation, including the Council of Trent, the Jesuits, the Inquisition, and the Index. The economic and intellectual relations of the Protestant movement and the political and religious struggles growing out of it are traced to the close of the Thirty Years' War. [Course 14 will not be given in 1898-99.]

3 hrs., both semesters. (SPENCER.)

15. Constitutional and Political History of the United States since 1850.—Course 15 is open to graduates, and to undergraduates who have had courses 7 and 8, or their equivalent. This course is practically a continuation of course 8. It is a study of the later phases of the slavery struggle, secession, the rebellion, reconstruction, and national problems since the war.

3 hrs., both semesters. (DUNIWAY.)

16. Pacific Coast History.—Open to a limited number of graduates and advanced undergraduates. This course will be conducted as an investigation course, with occasional lectures. Its members will be expected to make independent investigations and to report their results to the class. This coöperative work will be so directed as to present a general treatment of the development of the Pacific Coast of America.

2 hrs., both semesters. (DUNIWAY.)

17. Constitutional Law of the United States.—This course deals with constitutional interpretation and development. The

following are the topics studied in the first year: The nature of the federal system; citizenship; suffrage and elections; The power of congress. Text-book: Thayer's Cases on Constitutional Law. [See also 17a.]

3 hrs., both semesters. (SPENCER.)

17a. Constitutional Law of the United States.—This is a continuation of course 17, dealing with other topics of constitutional law. [Course 17a will not be given in 1898-99.]

2 hrs, both semesters. (SPENCER.)

18. Development of Political Theories in the Seventeenth and Eighteenth Centuries.—After a consideration of the differences between the mediæval and the modern state and of the point of view of mediæval writers on politics, a survey will be made of the ideas of the sixteenth century. The course will consist mainly of the study of English and French political writers of the two following centuries. The point of view will be the conflict between conservative or absolutist and liberal or democratic tendencies, and the different uses made of the notions of natural law and of social compact as foundations for opposing views will be investigated. The attempt will be made carefully to trace the connection of theories with practical politics, whether as cause or as result. This is a seminary course, with one session each week. Open to third and fourth year students.

2 hrs., both semesters. (SPENCER.)

19. Department Seminary.—The Seminary is designed primarily to afford a practical training in methods of historical research through the use of original materials; and it combines the advantages of a University Historical Society. The distinctive work of graduates falls mainly under direction of the Seminary. On invitation it may be taken by fourth year students in History and by others who are deemed qualified. All the instructors in the Department will attend as members and leaders. The work at the weekly sessions will consist of the presentation and discussion of papers, reports, book reviews, and similar results of independent research. A record of proceedings will be made by the Secretary. Members of the Seminary are not expected to register for course 20. The work of the year 1898-99 will fall in two main divisions: (*a*) studies in historical methods (first semester); (*b*) student reports on thesis investigations (second semester.) *2 hrs., both semesters.* (HOWARD, SHOW, SPENCER, KRIEHN, DUNIWAY.)

20. Thesis or Research Work.—In all courses in History, unless otherwise specified, students will be given an additional hour of credit, on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. As a rule, every student taking History as a major subject is required to register for thesis work; but no one should register until after consultation with the instructors in the courses which he proposes to take. In special cases permission will be given to register for two hours. When a student is taking two or more courses in History the same semester, he may select his thesis in connection with either of them. Topics for independent investigation are suggested in connection with the various courses in the Historical Department. Registration for thesis work is not intended to exempt students from such incidental reports or discussions as may be required in connection with any course.

1 or 2 hrs., each semester.

21. Social and Economic History of England during the Middle Ages.—The main weight of the course will be placed on economic evolution, viz: the growth of agriculture, industry, and commerce, and the relation of the state thereto. It will comprise a detailed treatment of such subjects as the manorial system, mediæval gilds, taxation, and the rigid state control of industry and commerce. These will be supplemented by selected culture topics on education, art, and science, particularly economic theory. The conditions of the masses is held constantly in view. [Credits given for courses 21 and 22 may be counted as major work in Economics.]

3 hrs., 1st semester. (KRIEHN.)

22. Modern Economic Development in England and the United States.—A continuation of course 21, along the same lines. It will treat particularly the restrictive legislation and politics by which England acquired her industrial and commercial supremacy; the attempted social revolution of the transitional period. Other topics studied will be the English poor relief, financial policy, the industrial revolutions, and present labor problems. American economic evolution will be treated along the same lines and with equal fulness.

3 hrs., 2d semester. (KRIEHN.)

23. History of Europe in the Seventeenth and Eighteenth Centuries.—This course will trace political history and

international relations from the Peace of Westphalia to the French Revolution. A special study will be made of the rise of Russia under Peter the Great and Catherine II; of Prussia under Frederick II; and of the beginnings of the conflict between Prussia and Austria for the headship of Germany. The period will be studied as one which the "Old Regime" was breaking up in Western Europe in preparation for the new era of individualism and democracy. From this point of view will be studied the growth of the maritime, commercial, manufacturing, and colonial ascendancy of England, the progressive intellectual movement in England and in France, the religious and humanitarian developments, the industrial revolution, and the break-down of the restrictive economic system in favor of arrangements based on freedom and individualism. [Course 23 will not be given in 1898-99.]

2 hrs, both semesters. (SPENCER.)

24. Constitutional History of Germany in the Middle Ages.—Open to all who have taken course 2 and who have a good reading knowledge of German. Course 24 begins with the tenth century and has for its main theme the constitutional development of mediæval Germany. Instruction is based on the text of Schröder's *Lehrbuch der deutschen Rechtsgeschichte*, with collateral use of Waitz, Brunner, and other modern writers. One two-hour session each week, to be fixed by the class. [Course 24 will not be given in 1898-99.]

2 hrs, both semesters. (SHOW.)

25. History of France in the Middle Ages.—Course 25 alternates with course 24, and is open on the same conditions. Beginning with the later Carolingian period, it traces the growth of feudal institutions in France, the rise of the Capetian monarchy, the influence of the Crusades, the wars with England, closing with the death of Charles VIII (A. D. 1498).

2 hrs., both semesters. (SHOW.)

26. Practical Course in Mediæval History.—Course 26 may be taken only by permission of the instructor. Reasonable facility in reading Latin, German, and French, is indispensable. The course will center each year on the critical study of some characteristic historical composition of the Middle Ages. For 1898-99, the class will make a critical study of the *Historia Langobardorum* of Paulus Diaconus. The method of instruction

will be entirely informal and practical. One two-hour session each week, to be fixed by the class.

2 hrs., both semesters. (SHOW.)

27. English Political and Constitutional History, Tudor and Stuart Periods.—Course 27 is open to graduates, and to advanced undergraduates with the approval of the instructor. It is a detailed study of the political and constitutional questions arising in the period from 1485 to 1688. The lectures include a careful reading and interpretation of the most important original documents accessible in print. Frequent written exercises on assigned topics give practice in judging debateable points of the history. [Course 27 will not be given in 1898-99.]

3 hrs., both semesters. (DUNIWAY.)

28. Seminary Course in Art History.—This course is intended to afford a special training in art history and criticism by an exhaustive study of the works of one or more of the chief masters of the Italian Renaissance. The subjects of the study will change from year to year; in 1899-1900 Michelangelo and Raphael will be considered. The work will include a detailed study of the lives of these masters, with Condivi's and Vasari's Lives as a basis, supplemented by their poems and correspondence. But most research will be devoted to their productions, real and attributed, in drawing, painting, sculpture, and architecture. [Course 28 will not be given in 1898-99.]

2 hrs., both semesters. (KRIEHN.)

29. Oral Discussion.—Open to graduates and advanced undergraduates. The aim of this course is twofold: (1) to give the student careful training in the preparation of spoken arguments on public questions in the fields of history, politics, economics, and sociology; (2) to afford experience in public speech on these questions, with the benefit of criticism from the instructors.

2 hrs., each semester. (DUNIWAY, LATHROP, SHOW.)

ECONOMICS AND SOCIOLOGY.

Professors WARNER and ROSS, and Assistant Professors M. R. SMITH and DURAND.

1. Elementary Economic Theory.—The fundamental principles of Economics will be presented by discussions based on text-book, supplemented by lectures and collateral reading.

2 hrs., 1st semester. (DURAND.)

2. Practical Economic Questions.—Discussion of living economic questions—the labor movement, labor legislation, corporations, trusts, industrial policy.

3 hrs., 2d semester. (DURAND.)

3. Money and Banking.—The origin and development of money; the precious metals, their history and present status; bimetallism; government notes, and present problems arising from them. The history and practice of banking. Bank notes, discounts, and other bank functions. [Not given in 1898-99.]

2 hrs., 2d semester. (DURAND.)

4. Transportation.—*a.* A study of the laws of movement and of the economic, social, and political consequences of improvements in transportation. Special studies will be made on roads, waterways, and street railways. (Fall semester.) *b.* A study of railroad problems. Extensive use will be made of the Hopkins Library of Railroad Literature. (Spring semester.)

3 hrs., both semesters. (ROSS.)

5. Corporate Industry.—A comparative and historical review of corporation law in its economic aspects. The course is designed as a preparation for the study of Railroad Problems or advanced work in the study of corporations. [Not given in 1898-99.]

3 hrs., 1st semester. (WARNER.)

6. Economic Theory.—A study of distribution as treated by recent writers. Böhm-Bawerk's *Positive Theory of Capital* will be the text. Training in rigid economic analysis will be kept in view. No student below fourth year may enter except by special permission.

2 hrs., 1st semester. (ROSS.)

7. Personal Economics.—The relation of the individual to wealth, especially to its acquisition and its use; together with the reactions of different standards of living upon the persons concerned. [Not given in 1898-99.]

2 hrs., 1st semester. (WARNER.)

8. Public Finance.—*a.* The state as an Economy. The history and theory of taxation and practical questions. (First semester.) *b.* Public debts. Methods of financial administration. Special attention to American financial history and problems and

to municipal finance, revenues from franchises, etc. (Second semester.)

2 hrs., both semesters. (DURAND.)

9. Politics and Administration. The practical working of American national, state, and local governments, with comparison of European institutions. Political methods and proposed reforms; parties, elections, legislation. Especial attention will be given to municipal government.

2 hrs., both semesters. (DURAND.)

10. Sociology of the Family.—A study of the development and conditions of the modern family. Lectures and one required paper. Open to all students. [Not given in 1898-99.]

2 hrs., 1st semester. (M. R. SMITH.)

11. Education and Society.—Lectures and reading. A study of the ruling tendencies in present social development and their relation to the aims of the teacher. Breadth, culture, character, morality, citizenship, industrial efficiency, assimilation, and individuality will be presented as educational aims.

2 hrs., 1st semester. (ROSS.)

12. Immigration.—Lectures, assigned reading, and handling of statistics. Historical, sociological, and statistical study of the foreign elements in the population of the United States. Open to students who have had one year's work in the department. [Not given in 1898-99.]

2 hrs., 1st semester. (M. R. SMITH.)

13. Social Pathology.—A study of abnormal conditions and the social causes and effects of vice, crime, and pauperism. Lectures and assigned reading. Open to students who have had one year's work in the department. [Not given in 1898-99.]

2 hrs., 1st semester. (M. R. SMITH.)

14. Charities and Corrections.—Supplementary to course 6, being a study of social therapeutics. Visits are made by the class to the charitable and penal institutions of the State, and a detailed study of an institution is made by each student. Open to students who have had one year's work in the department. [Not given in 1898-99.]

2 hrs., 2d semester. (M. R. SMITH.)

15. Statistics and Sociology.—Vital and social statistics with special reference to method. Lectures, demonstration, and handling of elementary statistics by students. Open to students who have had one year's work in the department. [Not given in 1898-99.]

3 hrs., 2d semester. (M. R. SMITH.)

16. Sociology.—Lectures, texts, and papers. Studies forces rather than institutions. The psychology of society is brought out in studies on mob-mind, craze, fad, fashions, conventionality, custom, tradition, invention, rational imitation, discussion, public opinion, ideal, standard, creed, 'ism, etc. Open to graduate and third and fourth year students.

3 hrs., both semesters. (ROSS.)

17. Thesis.—In certain courses students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. Required of major students in their third year.

1 hr., either semester.

18. Seminary.—Theses, book reviews, reports, economic news. Required of graduates and fourth year students having their major in this department. No registration except at beginning of the academic year.

2 hrs., both semesters. (WARNER, ROSS, DURAND.)

LAW.

Professor ABBOTT, Instructor WHITTIER, Assistant HINSDALE, and Lecturer HUTCHINSON.

The Department of Law conforms in all respects to the other departments of the University. The requirements for admission are the same; the courses are open for election as major or minor subjects the same as in other departments; the same degree is granted to those who have taken Law as a major subject; in short, the work is that of a regular University Department. The full course as finally announced will include the subjects studied in the best professional schools.

The present aims of the department are: (1) To furnish such instruction in the elementary principles of Anglo-American law as may properly form a part of the education of an American citizen;

(2) To furnish such instruction in commercial law as may be adapted to the needs of those who intend to become merchants, bankers, brokers, etc., or to follow other lines of business; (3) To begin the study of legal history and legal institutions; (4) To furnish to students intending to adopt law as a profession instruction in some of the courses studied in professional law schools.

Students who enter the department with the intention of taking a degree in Law are recommended to acquire a reading knowledge of Latin, and to prepare themselves for courses 12 and 13 in Latin.

The courses in Law should be taken substantially in the order given, and are to be supplemented by courses in other departments to be selected under the advice of the professors in Law. Students in Law are recommended to make History or Economics their minor courses, especially English and American Constitutional History. Usually the student will not be advised to take any Law during his first year in the University, but rather, to begin with his minor subject, and with such other subjects as will best fit him for assuming the study of law. As a condition to graduation in Law each student will be required to present a thesis of about three thousand words on a subject to be selected under the advice of the major professor.

Students whose major subject is Law will not be allowed to register for more than eight hours of Law in any one semester; and such major students who are carrying as many as six hours in Law will not be allowed to register for more than nine hours in other subjects.

1. **Elementary Law.**—This course deals with the structural elements of Anglo-American law and is intended to familiarize the student with its fundamental conceptions, principles, classifications, and relations. [Text-book: Robinson's Elementary Law (Little, Brown & Co., Boston, Mass.)]

3 hrs., 2d semester. (HINSDALE.)

2. **Common Law Pleading**—This course includes a study of the different forms of action at Common Law and of the system in vogue in England after the Hilary Rules. [Text-book: Ames' Cases on Pleading (Charles W. Sever, Cambridge, Mass.); Students are recommended to purchase for reference Stephen on Pleading, Williston's Edition (Harvard Law Review Publishing Association, Cambridge, Mass.)]

3 hrs., both semesters. (WHITTIER.)

3. **Contracts.**—This course is a study of the elementary principles and conceptions of the law of contracts as deduced from leading cases. [Text-book: Langdell and Williston Cases on Contracts (Little, Brown & Co., Boston, Mass.); Students are recommended to purchase for reference Anson on Contracts, Huffcut's edition (Baker, Voorhis & Co., New York), or Harriman on Contracts (Little, Brown & Co.)]

3 hrs., both semesters. [WHITTIER.]

4. **Torts.**—This course deals with the non-contract private law, that is, with the fundamental legal rights, other than those growing out of contract, the various wrongs by which such rights are invaded, together with the methods and limits of redress. Leading cases will be studied.

5. **Criminal Law.**—This course deals with the law of crimes. It will include a study of the history of the criminal law, as well as of specific crimes. [Text-books: Beale's Cases on Criminal Law (Harvard Law Review Publishing Association); Students are recommended to purchase for reference Clark's Criminal Law (West Publishing Co., St. Paul, Minn.)]

6. **Persons and Domestic Relations.**—This course includes a study of the legal relations of the family, of marriage and divorce, husband and wife, parent and child, guardian and ward, and such aspects of master and servant as are not treated under agency.

7. **Agency.**—This course will include a study of the law of Principal and Agent, Brokers, Factors, Attorneys in Law and in Fact.

8. **Sales.**—This course will include those topics incident to the transfer of personal property by sale; the form of the contract, especially as affected by the Statute of Frauds; the Contract of Warranty; and the remedies of buyer and seller in case of breach of the contract.

9. **Negotiable Paper.**—This course will deal with the law of Bills, Notes, and Checks. As arranged, it is proposed to make the course of advantage to those intending to engage in business, as well as to those intending to practice law. [Text-books: Ames' Cases on Bills and Notes. Students should provide themselves with some treatise on the subject, for reference.]

10. Property.—This course will include the law of Personal and Real Property, and will require three years to complete the subject. [Text-books: Gray's Cases on Property (Charles W. Sever, Cambridge, Mass.) and Digby's History of the Law of Real Property (Clarendon Press, Oxford). Students are recommended to purchase for reference Pollock's Land Laws (Macmillan & Co.) and Pollock and Maitland's History of English Law (Little, Brown & Co., Boston)].

a. The first year's course will consist of a study of Vol. I, Gray's Cases. This includes Personal Property and the Introduction to the law of Real Property. The student should read Vol. II, Blackstone, before taking up this course.

2 hrs., both semesters. (ABBOTT.)

b. The second year's course will consist of a study of Vol. II and Vol. III, Gray's Cases.

3 hrs., both semesters. (ABBOTT.)

c. The third year's course will consist of a study of cases selected from the remaining volumes of Gray's Cases.

3 hrs., both semesters. (ABBOTT.)

11. Anglo-Saxon Laws.

a. *Elementary Course.*—In this course the laws of Ine and Alfred will be read and interpreted. The text recommended is either Schmid, Die Gesetze der Angelsachsen, 2d ed., or Turk's ed. of the Legal Code of Alfred the Great (Boston, Ginn & Co.)

1 hr., both semesters. (FLÜGEL.)

b. *Advanced Course.*—This course is a continuation of course *a*, and will be devoted to an interpretation of the whole body of Anglo-Saxon law. The text used will be Schmid's ed. 'The Essays in Anglo-Saxon Law' (Boston, Little, Brown & Co.) are recommended. [As the laws will be read in Anglo-Saxon, a short grammatical outline of the language will be given, based on Sweet's Anglo-Saxon Primer. A reading knowledge of Latin and German will be very desirable, and for the advanced work necessary.]

1 hr., both semesters. (FLÜGEL.)

12. Moot Court.—The moot courts are limited to nine members each. Four members prepare briefs and argue a case, the remainder of the members sit as judges. Courts may be organized when required. Each member will be required to

prepare one brief and two opinions, or two briefs and one opinion, each semester for which he registers. Only those students who have had course 1, or an equivalent in law, can register for moot-court work.

1 hr., both semesters.

13. Code Pleading.—This course includes a study of the California Code of Civil Procedure.

1 hr., 2d semester. (HUTCHINSON.)

[**14. Constitutional Law.**—See History, 17.]

[**15. Roman Law.**—See Latin, 13.]

MATHEMATICS.

Professors ALLARDICE, LITTLE, and GREEN, Assistant Professor COX, Instructor BLICHFELDT, and Assistants WRIGHT and STAFFORD.

The courses in this Department have been arranged to meet the wants of three classes of students—students whose major subject is Mathematics, students in the departments of Engineering and Physics, and students who, while taking their major in some other department, desire to include some Mathematics in their course.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 7 and 8; in the second year, courses 9 and 10; in the third year, courses 11 and 12; while the work during the fourth year and for graduate students may be selected from the remaining courses. The advanced courses in the more modern branches of Mathematics will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern Mathematics. Courses 1, 2, 3, 4, 5, and 6 have been arranged for students in Engineering and Physics, after consultation with the professors in these departments; courses 1, 2, 3, and 4 forming the work for the first year, and courses 5 and 6 for the second year. The first semester's work of course 13, Differential Equations, may be taken by those Engineering students who desire to include this subject in their course.

Student who desire to take one or more years of Mathematics as a part of a liberal training are recommended to begin their work in this department with courses 7 and 8, or with one of them.

1. Algebra.—(Two sections.)
2 hrs., both semesters. (WRIGHT, STAFFORD.)

2. Trigonometry.—(Two sections.)
3 hrs., 1st semester. (WRIGHT, STAFFORD.)

3. Solid Geometry.—(Two Sections.) In this course a few weeks will be devoted to a discussion of some of the more important parts of Plane Geometry.
2 hrs., 1st semester. (WRIGHT, STAFFORD.)

4. Co-ordinate Geometry.—(Two sections.)
5 hrs., 2d semester. (WRIGHT, STAFFORD.)

Courses 1, 2, 3, and 4 constitute the first year's work for students in Engineering.

5. Calculus.—Byerly's treatises are used as texts.
5 hrs., both semesters. (COX.)

6. Analytical Mechanics.
3 hrs., both semesters. (LITTLE.)

Courses 5 and 6 constitute the second year's work for students in Engineering.

7. Geometry.—This course includes a discussion of some of the more modern developments of Synthetic Geometry. Open to students who have credit for Plane Geometry as an entrance subject.
2 hrs., both semesters. (ALLARDICE.)

8. Algebra and Trigonometry.—Chrystal's *Algebra* will be used as a text-book, but the subject will be presented in as elementary a form as possible. Open to students who have credit in Elementary Algebra as an entrance subject.
3 hrs., both semesters. (GREEN.)

Courses 7 and 8 should be taken as the first year's work by students making Mathematics their major subject. These courses are recommended to students whose major subject lies in some other department, but who may desire to include some Mathematics in their course.

9. Advanced Algebra.—A continuation of course 8. Chrystal's *Algebra* is used as a text-book.

2 hrs., both semesters. (GREEN.)

10. Co-ordinate Geometry.—Charles Smith's *Conic Sections* is used as a text-book.

3 hrs., both semesters. (COX.)

Courses 9 and 10 form the regular work, during the second year, for students whose major subject is mathematics.

11. Advanced Co-ordinate Geometry.—Salmon's *Conic Sections* is used as a text-book.

2 hrs., both semesters. (COX.)

12. Differential and Integral Calculus.—Lectures on the Differential and Integral Calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises.

3 hrs., both semesters. (ALLARDICE.)

13. Differential Equations.—This course is so arranged that the work of the first semester may be taken by students in Electrical Engineering.

3 hrs., both semesters. (LITTLE.)

14. Theoretical Mechanics.—A reading course in Thomson and Tait's Natural Philosophy.

2 hrs., both semesters. (LITTLE.)

15. Theory of Equations.—Burnside and Panton's *Theory of Equations* is used as a text-book. [Not given in 1898-99.]

2 hrs., both semesters. (GREEN.)

16. Modern Analytical Geometry.—Lectures. [Not given in 1898-99.] *3 hrs., both semesters.* (GREEN.)

17. Theory of Functions.—An elementary lecture-course. [Not given in 1898-99.]

2 hrs., both semesters. (ALLARDICE.)

18. Geometry of Three Dimensions.—Salmon's *Geometry of Three Dimensions* is used as a text-book. [Not given in 1898-99.]

3 hrs., both semesters. (ALLARDICE.)

19. Invariants.

2 hrs., both semesters. (ALLARDICE.)

20. Projective Geometry. — Lectures following Reye's *Geometrie* der Lage. [Not given in 1898-99.]

2 hrs., 1st semester. (ALLARDICE.)

21. Higher Plane Curves.—Lectures.

2 hrs., both semesters. (GREEN.)

22. Statics.—Minchin's *Statics* is used as a text-book. (Not given in 1898 99]

2 hrs., both semesters. (LITTLE.)

23. Vector Analysis.—A course of lectures upon Vector Algebra and its applications.

2 hrs., both semesters. (LITTLE.)

24. Theory of Substitutions.—[Not given in 1898-99.]

2 hrs., 2d semester. (ALLARDICE.)

25. Theory of Functions.

3 hrs., both semesters. (ALLARDICE.)

26. Curve Tracing.—Frost's Curve Tracing is the text-book used. [Not given in 1898-99.]

2 hrs., both semesters. (GREEN.)

PHYSICS.

Professor SANFORD, Assistant Professors TAYLOR, STEARNS, and MURPHY, and Assistant NUTTING.

I. LABORATORY COURSES.

1. Dynamics.—Open only to students who have had Elementary Algebra and Plane Geometry. To precede all other courses offered in Physics. One lecture and two laboratory periods per week.

3 hrs., either semester. (MURPHY, NUTTING.)

2. Electricity and Magnetism.—One lecture and two laboratory periods per week.

3 hrs., either semester. (MURPHY, NUTTING.)

3. Heat and Sound.—One lecture and one laboratory period per week.

2 hrs., 2d semester. (MURPHY.)

4. Elementary Optics.—Open only to students who have had Trigonometry. Only a small class can be accommodated, and the

preference will be given to students who need this training for their major subject.

2 hrs., 2d semester. (SANFORD.)

5. Experimental Optics.—For major students in Physics. A few others will be admitted by special arrangement.

2 hrs., both semesters. (SANFORD.)

6. Electrical and Magnetic Measurements.—To be accompanied by lecture course *a*. Open to students who have had courses 1 and 2, or their equivalent, and may be made a two years' course.

3 hrs., both semesters. (TAYLOR.)

7. Electro-Chemical Measurements.—To be accompanied by lecture course *a*. Open to students who have had courses 1 and 2, or their equivalent.

3 hrs., both semesters. (TAYLOR.)

8. Investigation of Original Problems in the Laboratory.

Hours to be determined in each case. (SANFORD.)

II. LECTURE COURSES.

a. Electrical and Magnetic Measurements.—To accompany laboratory courses 6 and 7.

1 hr., both semesters. (TAYLOR.)

b. General Physics.—For students who have had ten hours of laboratory Physics.

3 hrs., both semesters. (SANFORD.)

c. Teachers' Course in Elementary Physics.—Open to students who have had courses 1, 2, 3, and 4, or their equivalent.

1 hr., both semesters. (SANFORD.)

d. Theoretical Physics.—A mathematical treatment of general physical laws, with applications of mathematics to the statement of physical phenomena. Open to students who have had Co-ordinate Geometry and Calculus.

2 hrs., both semesters. (MURPHY.)

e. Thermodynamics.

2 hrs., both semesters. (STEARNS.)

Laboratory Fees.—For laboratory courses 1, 2, 6 and 7 a fee of three dollars a semester will be charged. For courses 3, 4 and

5 the fee will be *two* dollars. In course 8, the fee will depend upon the number of hours credit and the apparatus used, but will not exceed five dollars per semester.

CHEMISTRY.

Professors STILLMAN, RICHARDSON, and LENOX, Assistant Professor YOUNG, and Assistants SWAIN and LYON.

I. LECTURE COURSES.

1. Elementary Inorganic Chemistry.—Explaining and reviewing laboratory course *a*, and open, in connection with that course, to all students in the University.

2 hrs, either semester. (RICHARDSON.)

2. Advanced Inorganic Chemistry.—Experimental lectures on General Inorganic Chemistry, based on the periodic system. Open to all students who have completed courses 1 and *a*, or an equivalent.

2 hrs., both semesters. (STILLMAN.)

3. Organic Chemistry.—Experimental lectures and reviews on the Chemistry of Carbon Compounds. Open to students who have completed course 2.

2 hrs., both semesters. (RICHARDSON.)

4. Industrial Chemistry.—Lectures on the processes of chemical arts and industries—fuels, acid and alkali manufacturing, glass, explosives, sugar-making and refining, petroleum, etc. Lectures in this course are also given by Professors RICHARDSON (Dyes), LENOX (Iron and Steel), and YOUNG (Pottery). Open to students who have completed courses 1, 2, and 13 and laboratory course *b*; may be taken concurrently with course 3.

2 hrs, both semesters. (STILLMAN.)

5. History of Chemistry.—Open to students who have completed courses 2 and 3. [This course will not be given in 1898-99]

1 hr., 2d semester, in alternate years. (RICHARDSON.)

6. Theories of Chemistry—Modern concepts in Chemical Theory. Open to students who have completed courses 2 and 3;

may advantageously follow course 5. [In 1898-99 course 6 will be given in the second semester, not in the first.]

2 hrs., 1st semester. (STILLMAN.)

7. **Urine Analysis.**—In connection with laboratory course *f*. Open to students who have completed at least one semester's work in Quantitative Analysis. [This course will not be given in 1898-99.]

2 hrs., 1st semester, in alternate years. (LENOX.)

8. **Advanced Organic Chemistry.**—Advanced topics in Organic Chemistry, including Stereo-Chemistry. Open to students who have completed course 3. [This course will be given in 1898-99.]

2 hrs., 2d semester, in alternate years. (YOUNG.)

9. **Toxicology.**—In connection with laboratory course *g*. Experimental lectures on the detection of the more important organic and inorganic poisons. Open to those who have completed at least one semester's work in Quantitative Analysis. [This course will be given in 1898-99.]

2 hrs., 1st semester, in alternate years. (LENOX.)

10. **Organic Synthesis.**—Treating of the more important general reactions for the transformation of carbon compounds. Open to students who have completed courses 3 and *c*. [This course will be given in 1898-99.]

1 hr., 2d semester, in alternate years. (RICHARDSON.)

11. **Thermochemistry.**—Lectures on the relations between heat and chemical energy, mainly treated by the methods of thermodynamics. Open to students who have completed course 6 and who have taken or are taking either course 5 or course 11 in Mathematics.

2 hrs., 1st semester. (YOUNG.)

12. **Seminary in Chemistry.**—Discussion of assigned topics in theoretical and general Chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the Faculty in chemistry.

1 hr., both semesters.

13. **Qualitative Analysis.**—In connection with laboratory course *b*.

1 hr., either semester. (LENOX.)

14. Electro-Chemistry.—Lectures on the generation of electricity by chemical processes, the theory of batteries, etc. *a.* Including lectures for the first semester which will be open to students who have completed course 2. *b.* Including lectures for the second semester which will be open only to students who have completed course 11.

1 hr., both semesters. (YOUNG.)

II. LABORATORY COURSES.

a. Elementary Inorganic Chemistry. — Experiments in Elementary Inorganic Chemistry in connection with course 1.

3 afternoons, either semester. (RICHARDSON, YOUNG, LYON.)

b. Qualitative Analysis.—Open to students who have completed course *a*.

3 afternoons, either semester. (LENOX, SWAIN.)

c. Preparation of Typical Carbon Compounds.—Open in connection with course 3 to students who have completed course *b*.

3 afternoons, either semester. (RICHARDSON.)

d. Quantitative Analysis.—Training in manipulation in gravimetric and volumetric methods and mineral analysis. Work begins either semester. Students in other departments than in Chemistry may register for three afternoons if they cannot arrange for four, as is recommended. Open to students who have completed courses 2, 3, and *b*.

4 afternoons, both semesters. (STILLMAN, LENOX.)

e. Advanced Laboratory Work.—Considerable option will be permitted during this year as to special lines of work to be pursued. Problems in Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Industrial Chemistry, Physical Chemistry, are among the special branches from which the advanced student may choose. Open to students who have completed course *d*.

4 afternoons, both semesters.
(STILLMAN, RICHARDSON, LENOX, YOUNG.)

f. Urine Analysis.—Open to students who are taking or have completed course 7. [This course will not be given in 1898-99.]

3 afternoons, 1st semester, in alternate years. (LENOX.)

g. Toxicology.—Open to students who are taking or have completed course 9. [This course will be given in 1898-99.]

4 afternoons, 1st semester, in alternate years. (LENOX.)

h. Inorganic Preparations.—A laboratory course in the preparation and purification of Inorganic Compounds. Open to students who have completed courses 2 and *b*.

3 afternoons, either semester. (YOUNG.)

Candidates for the degree of Bachelor of Arts in Chemistry will be required to complete courses 1, 2, 3, 13, *a*, *b*, *c*, and *d* in Chemistry, course 1 in Physics, courses 1 and 2 in German. Students who are candidates for A. B. in Chemistry, but are looking forward to Medicine or Pharmacy as a career, are permitted to substitute Physiology 1 for Physics 1 when it is not practicable for them to take both.

III. CHEMICAL ENGINEERING.

In recognition of an increasing field of activity for men qualified to occupy positions as superintendents and managers of manufacturing enterprises involving chemical processes, it has been decided, in co-operation with the departments of Civil Engineering and Mechanical Engineering, to offer students the opportunity to obtain such training as will best qualify them for such positions. Experience shows the great advantage in these positions of fundamental training in principles of construction, strength of materials, steam engineering, machine designing, combined with thorough chemical training.

The degree of Engineer in Chemical Engineering will be conferred upon the completion of the following courses: Chemistry, 1, *a*, 2, 3, 4, 13, *b*, *c*, *d*, *e*; German, 1, 2; Physics, 1, 2; Mathematics, 1, 2, 3, 5, 6; Civil Engineering, 1, 2; Mechanical Engineering, 2, 3, 4, 5, 7, and 8; Thesis work.

It is estimated that students entering the University with that intention will be able to take the degree in one year after the baccalaureate degree. Students pursuing this course will be given the degree of Bachelor of Arts in Chemistry at the end of four years.

Laboratory Fees—A charge of *twenty dollars* per semester will be made to students in all laboratory courses. Students registering for more than four hours per week will be charged *twenty-five dollars* per semester. Of these charges five dollars per semester is returnable, less bills for breakage or loss of apparatus.

BOTANY.

GENERAL BOTANY.

Professor CAMPBELL, and Assistant Professor PEIRCE.

1. **Elementary Botany**—Study of representatives of the principal groups of plants, with lectures upon special morphology and classification. (Campbell's Elements of Structural and Systematic Botany.) The aim of this course is to give the student a grounding in the principles of plant structure and classification, derived from a careful study in the laboratory of selected types, supplemented by such explanatory lectures as may be deemed necessary.

3 hrs., both semesters. (CAMPBELL, PEIRCE.)

2. **Algæ.**—Lectures, reading, and laboratory work upon the special morphology and classification of the Algæ.

3 hrs., 1st semester. (CAMPBELL.)

3. **Archegoniatæ.**—Special morphology and classification of the Archegoniatæ. Continuation of course 2.

5 hrs., 2d semester. (CAMPBELL.)

4. **Histological Methods.**—Application of microtome sectioning to the study of morphology and development.

2 hrs., both semesters. (CAMPBELL.)

5. **Elementary Bacteriology.**—Laboratory work, lectures, and reading.

3 hrs., 1st semester. (PEIRCE.)

6. **Experimental Physiology.**—Laboratory work, lectures, and reading.

3 hrs., 2d semester. (PEIRCE.)

7. **The Evolution of Plant Forms.**—Lectures. Open to all except first year students.

1 hr., 2d semester. (CAMPBELL.)

8. **Advanced Work.**—Intended especially for graduate students.

Course 1 must precede all other courses, except course 7, and students making the subject a major must complete courses 1 to 6 inclusive, and also courses 2 and 3 in Systematic Botany, before

graduation. Course 8 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

Laboratory Fees.—Ten dollars for course 5; three dollars per semester for each of the other laboratory courses.

SYSTEMATIC BOTANY.

Professor DUDLEY.

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction.

Course 1 or its equivalent is required of students intending to graduate with Systematic Botany as a major study. It is also required as a basis for courses 2, 4, and 6. An elementary knowledge of the structure of the flowering plants only is required to enter courses 3 and 5.

1. Elementary Botany.—A study of plant types, etc. [See course 1 under General Botany.]

2. The Fungi.—The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account of economically important forms.

5 hrs., 1st semester. (DUDLEY.)

3. Spermaphyta.—The morphology, histology, and affinities of the principal orders of flowering plants represented on the Pacific Slope will be studied, and an acquaintance made with typical forms through dissection and drawing.

4 hrs., 2d semester. (DUDLEY.)

[**4. The Algæ and Archegoniatæ.**—See courses 2 and 3 under General Botany.]

5. Geographical Distribution. — Lectures on the orders containing trees and shrubs and on the general principles of geographical distribution which they illustrate. Laboratory work, also preparation of herbarium specimens of woody plants, native and exotic.

2 hrs., 2d semester. (DUDLEY.)

6. Advanced Work.—Advanced work and special investigation on the biology of the Spermaphytes and Fungi, including systematic studies, and the natural methods of cross fertilization.

3 or more hrs., per semester. (DUDLEY.)

Laboratory Fees.—Three dollars per semester.

ENTOMOLOGY.

Professors COMSTOCK and KELLOGG, and Assistants SNOW and SNODGRASS.

The instruction in this Department is given by means of lectures, laboratory practice, and field work. In the lectures the more general questions are discussed, with the view of giving the students as broad a knowledge of the subject as is practicable in the time devoted to it. In the laboratory work special attention is paid to the methods of investigation and to training in accurate observation.

1. General Lecture Course. — Lectures treating of the zoological position of insects; the habits of insects, with special reference to those species that are of economic importance; and the practical application of Entomology, including discussions of insecticides and of the various methods of controlling the ravages of insects injurious to agriculture. (Lectures, January to March.) Two hours' credit will be given on completion of the lectures. Students may extend the course to the end of the semester by laboratory work in collecting and preserving insects, and in practice in the determination of families. An additional hour of credit will be given for this work. [Not given in 1897-98.]

2 or 3 hrs., 2d semester. (COMSTOCK.)

2. Introductory Laboratory Course.—Laboratory and field work, and occasional lectures. The course includes the elementary study of insect morphology and physiology, the determination of genera and species, and practice in collecting and preserving specimens. [Not given in 1897-98.]

3 hrs., both semesters. (KELLOGG.)

3. Advanced Laboratory Course.—Special work in morphology, or classification, or in the life-history of insects. Open to students who have completed course 2.

2 to 5 hrs., both semesters. (SNOW, SNODGRASS.)

4. **Comparative Morphology, and Taxonomy.**—One lecture a week on studies in comparative insect morphology and on their application to insect taxonomy. Open to students who have had some training in biology. [Not given in 1897-98.]

1 hr., 2d semester. (KELLOGG.)

5. **Natural History of Insects.**—An introduction to the study of natural history, based on observation of the structure and life-history of insects. This is intended especially for those who expect to teach Entomology or general natural history in elementary schools. One lecture and two laboratory or field exercises weekly. [Not given in 1897-98.]

3 hrs., 1st semester. (KELLOGG.)

6. **Morphology and Classification of the Coccidæ** (Scale insects).—Laboratory and field work. Open only to students who have completed course 2. [Not given in 1897-98.]

3 hrs., January-March. (COMSTOCK.)

Students making Entomology a major must complete courses 1 to 4 and course 6, and must have an elementary knowledge of Botany and general Zoology before graduation.

Special investigations in insect morphology or physiology, or in taxonomic work, will be arranged for graduate students.

Laboratory Fees.—Three dollars per semester for each laboratory course.

THE ENTOMOLOGICAL COLLECTIONS.

The Entomological cabinets contain specimens of the more common species of the United States. These have been determined by specialists of the various orders, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects.

HYGIENE AND ORGANIC TRAINING.

Professor WOOD, Instructor STOREY, and Assistants MARCH, SNOW, EDWARDS, ROSE, HULL, and HILL.

The aims of this Department are: (1) To provide general and special instruction in matters pertaining to the improvement and preservation of health; (2) To help the student, through

individual advice and assistance, toward personal improvement and restoration of health ; (3) To furnish the student, through facilities and instruction in the Gymnasium and elsewhere, opportunity for general organic development ; (4) To provide a thorough training for those who wish to prepare themselves for teaching in this branch of education. The work in "physical training" is under the supervision of the medical director, who is the professor of hygiene and organic training.

For the gymnastic training of students there are two buildings, Roble Gymnasium for the young women, and Encina Gymnasium for the young men. Both are temporary frame buildings, but are substantially built and equipped with suitable apparatus.

Excellent facilities for athletics have been provided. The young women have two tennis courts, paved with bituminous rock ; the young men have four courts of the same material. In addition, the athletic grounds contain a quarter mile track, and areas for basket-ball, base-ball, foot-ball, and field sports. A small lake near the University buildings furnishes opportunities for rowing in small boats.

All students are entitled to anthropometric and medical examination. The information furnished by measurement and examination gives the medical director the basis for advice to the student as to the hygienic regimen most conducive to health and development. Exercises are prescribed for the individual, first for the correction of special weakness and then for rational and symmetrical development. The regular gymnastic work is under the constant supervision of the instructors.

Facilities are provided for the examination of sight and hearing. The purpose of these tests is to determine whether the special sense organs are normal. If the condition is abnormal and serious enough to demand further attention the student is advised to have the defect corrected by some competent specialist.

The medical director is in his office an hour, daily, for consultation.

1. Gymnastic Exercises.—Individual and class work, with and without apparatus. Open to all students, under the advice of the medical director. One hour of credit will be given for systematic prescribed exercise, the three exercises a week to be taken on separate days arranged according to the work of the student. (Three exercise hours a week.)

1 hr., both semesters. (Wood, Storey, March, Edwards, Rose, Hill.)

2. Personal Hygiene.—Open to all students. Course 2 is designed to give the student practical knowledge upon matters pertaining to the individual care of the body, preservation and improvement of health, prevention of disease, and treatment in emergencies or "First Aid to the Injured."

2 hrs., either semester. (WOOD, MARCH.)

3. Sanitary Science.—Open to students who have completed course 2. Course 3 will take up the study of public health, general hygiene, and sanitary science. Students will prepare papers upon assigned topics.

2 hrs., 2d semester. (WOOD.)

4. School Hygiene.—Open to those who are preparing to teach. A study of the child organism, special hygiene of childhood and adolescence, physiology and hygiene of the nervous system, health condition of schools and hygiene of instruction, diseases caused or favored by school life and their prevention.

2 hrs., 1st semester. (WOOD.)

5. Nursing.—Open by special permission to those who have had satisfactory preliminary training. This course is not intended for the training of professional nurses, but to give the student useful knowledge and practical training in matters pertaining to the care of the sick, treatment of injuries, what to do in emergencies, hygiene of the sick room, and similar topics.

2 hrs., 2d semester. (WOOD.)

6. Hygiene of Sex.—Open to advanced students by special permission.

1 hr., both semesters. (WOOD.)

The following courses, in addition to courses 2, 3, and 4, are recommended for candidates for graduation in Hygiene and Organic Training, and for special students in this department.

[**7. General Anatomy and Physiology.**—See course 1 in Physiology; or *General Zoology.*—See course 1 in Zoology.]

[**8. Animal Physiology.**—See course 2 in Physiology.]

[**9. Organic Life.**—See course 1 in Bionomics.]

10. Applied Anatomy and Physiology.—Course 10 takes up the study of human anatomy and physiology from the standpoint of hygiene and organic training.

2 hrs., both semesters. (WOOD, SNOW.)

11. Kinesiology, and History of Gymnastics.—Special physiology of exercise, bodily mechanics, history of "Physical Education," and study of the various "Systems of Physical Training." *2 hrs., 1st semester.* (Wood, Storey.)

12. Special Gymnastic Training.—Includes individual and class exercises ; use of gymnastic apparatus ; calisthenics ; light and heavy gymnastics, health and medical gymnastics, with and without apparatus. Gymnastic games. (Five exercise hours a week.) (Wood, Storey, March, *2 hrs., both semesters.* Edwards, Rose, Hill.)

13. Anthropometry.—Instruction in methods of examining, measuring, and testing the body, tabulation and charting of statistics and Photography. (One lecture and three laboratory hours a week.)

2 hrs., 2d semester. (Wood, Storey, March, Snow.)

14. Special Courses.—Special courses of study are laid out for advanced students according to the qualifications of each individual. Such courses include the study of topics related to Hygiene, Sanitation, and Gymnastics ; investigations in Anthropometry, diagnosis, special tests and specific effects of various kinds of activity upon the different structures and functions of the human organism.

PHYSIOLOGY AND HISTOLOGY.

Professor Jenkins, Associate Professor McFarland, Instructors Wilbur and Stoltenberg, and Assistant Cleaveland.

UNDERGRADUATE COURSES.

1. General Anatomy and Physiology.—This course is designed to give a general view of the laws of the structure and the activities of organisms. The work will give occasion to discuss many questions of General Biology. It consists of : First, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tissues ; second, the study of the laws and course of development, resulting in higher differentiations in structure, and specializations in function exhibited in a selected series of organisms, both animals and plants, of increasing complexity ; third, the comparative study of the physiological processes of forms placed under

widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (JENKINS, STOLTENBERG, CLEAVELAND.)

2. **Animal Physiology**.—This course is to be preceded by course 1. It includes an experimental course in physiology in the subjects: Muscle, nerve, blood, circulation, digestion, respiration, elimination of wastes, metabolism, nutrition. The work is based on Foster's Physiology, Parts I and II, as the text. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (JENKINS, WILBUR.)

3. **Structure and Functions of the Nervous System and the Sense Organs**.—This course comprises a comparative study of a series of vertebrate brains, including the human brain, the development of the vertebrate nervous system and sense organs, and an experimental course in the physiology of the nervous system and sense organs based on Foster's Physiology, Parts III and IV. For texts in structure the student is referred to Quain's Anatomy, 10th ed., and Edinger. It is desirable that students in this course should have had at least the biological training represented by course 1. Students are advised to take course 7 in connection with this course. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (JENKINS, STOLTENBERG.)

4. **Blood and Circulation**.—Advanced course open only to those who have completed courses 1, 2, and 6.

3 hrs., 1st semester. (JENKINS, WILBUR.)

5. **Special Courses in Physiology**.—These courses are open to those who have taken courses 1, 2, and 6. They are arranged for the advanced study of special subjects or as a drill in the methods of research. The work will be arranged for each individual student. The time of each will vary with the exigencies of the case.

2 to 5 hrs., both semesters. (JENKINS, WILBUR.)

6. **Histology**.—This course includes both the study of the tissues in a comparative way, and the history of their development.

Open to those who have taken course 1, or its equivalent. Students with Physiology as their major are advised to take courses 2 and 6 together. (One lecture and five laboratory hours a week.) *3 hrs., both semesters.* (McFARLAND.)

7. Histology of the Nervous System and the Sense Organs.—A course in advanced Histology dealing with the comparative structure of the Nervous System and Sense Organs. Open to those who have taken courses 1 and 6, and designed to be taken in connection with course 3. (One lecture and three laboratory hours per week.)

2 hrs., 2d semester. (McFARLAND.)

8. Special Courses in Histology.—For advanced students who have completed courses 1, 6, and 7 special courses in Histology are offered. These are intended to afford opportunity for advanced study in special phases of Histology, Histogenesis, or Cytology together with drill in the technique of the subjects and methods of research.

2 to 5 hrs., both semesters. (McFARLAND.)

9. Cellular Biology.—A course in Cytology dealing with the structure and functions of the cell, with especial reference to the reproductive processes in unicellular and multicellular organisms, and the theories connected therewith. (Two lectures per week with demonstrations and laboratory work.)

2 hrs., 2d semester. (McFARLAND.)

10. Mammalian Anatomy.—Lectures and dissections.

2 to 5 hrs., 2d semester. (WILBUR.)

11. Journal Club.—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology. *1 hr., both semesters.*

12. Seminary in Physiology and Histology.—Open to graduate students.

2 hrs., both semesters. (JENKINS, McFARLAND.)

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, 6, 7, and 11, and at least five hours to be made up from courses 4, 5, 8, 9, and 10; and in addition, courses 1 and *a* in Chemistry, or courses 1 and 2 in Physics, and the first semester of Vertebrate Embryology (course 4 in Zoology.)

Laboratory Fees.—Seven dollars per semester, except for course 1, in which the fee is five dollars per semester.

GRADUATE COURSES.

The graduate courses in Physiology and Histology will be planned in the case of each individual student. They will include the thorough study of some of the more recent special treatises of various subjects in Histology and Physiology, and a repetition of a sufficient number of experimental investigations to give a discipline in the methods of investigation. There will be given at different times a series of advanced lectures on Physiological and Histological subjects. The graduate students will meet weekly to discuss the journals of the Department, and will participate in the work of the Seminary in Physiology and Histology. Candidates for the Doctor's degree will occupy a considerable portion of their course on some original research, the subject of which is determined by their previous training and their inclinations. The collateral subjects to be pursued with the major will be chosen for each candidate with reference to his particular needs.

PREPARATORY MEDICAL COURSE.

Students intending to enter on the study of medicine, are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, Comparative Anatomy of the Vertebrates, and Hygiene among the collateral subjects. Such a course gives hat foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools in a shorter time and with much greater advantage.

ZOOLOGY.

Professor GILBERT, Associate Professor PRICE, Instructor SNYDER, and Assistant GREELEY.

1. General Zoology.—A laboratory course, involving the study of representatives of the principal groups of animals, together with lectures on their structure and classification, and on the general laws of biology which they illustrate.

3 hrs., both semesters. (PRICE, GREELEY.)

2. The Vertebrates.—A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens.

2 hrs., both semesters. (GILBERT, SNYDER)

3. Comparative Anatomy of the Vertebrates.—A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc.

3 hrs., both semesters. (GILBERT.)

4. Vertebrate Embryology.—During the first semester, the development of the chick; for the second semester, the shark, salamander, and mammal.

2 hrs., both semesters. (PRICE.)

5. Advanced Embryology.—The work during the first semester will consist of a detailed study of the development of the nervous system, the urinogenital, or some other important system of organs. During the second semester, each student will be given some special problem, usually in the line of the verification of some piece of original work.

2 hrs., both semesters. (PRICE.)

6. Ichthyology.—A course of lectures and laboratory work, including an examination of the larger groups of fishes, with special reference to the characters on which they are based, and including practical work in the discrimination of species.

2 to 5 hrs., both semesters. (GILBERT.)

7. Advanced Ichthyology.—Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

2 to 5 hrs., both semesters. (GILBERT.)

8. Course in Zoological Reading.

2 hrs., both semesters. (GILBERT, PRICE.)

The *Zoological Club* meets bi-weekly to discuss and record the original observations of its members. Field excursions are frequently taken, and a zoological exploration of the vicinity of Palo Alto is in progress.

Course 1 or its equivalent must precede all others, and courses 1 to 8 or their equivalents will be completed before graduation by all regular students making Zoology their major study.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

Laboratory Fees.—Five dollars per semester.

THE ZOOLOGICAL MUSEUM.

The Zoological Museum contains a very full representation of the fishes of North America, and includes among others a valuable series of the deep-water fishes of the Pacific, and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, and the coasts of Mexico and Central America; in all, about 50,000 alcoholic specimens, representing about 3,000 species. The museum contains also about 4,000 reptiles and 1,000 batrachians in alcohol, 3,000 mammal skins, 3,500 bird skins, and 125 mounted skeletons. The development of the museum has been due very largely to the coöperation of Mr. Timothy Hopkins.

Material illustrating the principal groups of invertebrates is ample for class instruction.

GEOLOGY.

Professors BRANNER and J. P. SMITH, and Associate Professor LINDGREN.

1. Dynamic and Structural Geology. — Lectures with syllabus.

3 hrs., 1st semester. (BRANNER.)

2. Economic Geology.—Lectures, with visits to mines. Open to students who have completed course 1.

2 hrs., 2d semester. (BRANNER.)

3. Topographic Geology.—Field and laboratory work, with the construction of geologic maps, models, and sections. Open to students who have completed course 1 in Geology, and course 4 in Civil Engineering.

2 to 5 hrs., both semesters. (BRANNER.)

4. Special Courses. — Special courses of instruction and training are laid out for advanced and special students according

to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

1 to 5 hrs., both semesters. (BRANNER.)

5. Mineralogy.—*a.* Blowpipe analysis (first semester). *b.* Elementary Crystallography and Physical Mineralogy (second semester). Open to students who have had course 1 in Geology and Elementary Chemistry.

2 hrs., both semesters. (J. P. SMITH.)

6. Advanced Mineralogy and Petrography.—*a.* Mathematical, Physical, and Chemical Crystallography (first semester). *b.* Descriptive Mineralogy and Petrography, with special studies of the rock-forming minerals (second semester). Open to advanced students and graduates.

4 hrs., both semesters. (J. P. SMITH.)

7. Paleontology.—*a.* Systematic Paleontology, or the history and character of organisms (first semester). *b.* Historical Geology, or the history and character of formations (second semester). Open to students who have completed course 1.

4 hrs., both semesters. (J. P. SMITH.)

8. Paleontology.—Original investigations of various problems in paleontology, especially of the distribution of faunas. This course will consist entirely of private work, in field and laboratory. Open to advanced students and graduates.

2 to 5 hrs., both semesters. (J. P. SMITH.)

9. Assaying.—Course 9 assumes courses 1, *a*, and *b* in Chemistry, and courses 1 and 2 in Geology.

2 hrs., 1st semester. (LENOX, LYON.)

10. Mining.—Lectures on mining operations and methods including prospecting, exploration, timbering, hoisting, drainage, and ore dressing. Open to those who have had courses 1, 2, and 5.

1 hr., 2d semester. (LINDGREN.)

11. Metallurgy.—Lectures on Metallurgy, with special reference to the metallurgy of copper, lead, silver, and gold. Open to those who have had Geology 1, 2, and 5, and Chemistry 1, *a*, and 2.

2 hrs., 2d semester. (LINDGREN.)

Laboratory Fees.—Five dollars for the first semester in course 5; twenty dollars in course 9.

DRAWING AND PAINTING.

Professor BROWN, Associate Professor CLARK, and Instructor FISKE.

The aim of the Department is to give power to observe, skill to record, and intellectual and esthetic sensibility to understand and feel. It is not intended to emphasize any particular technical style; the only technical requirements pertain to those principles of workmanship common to all good work. Scientific students can easily work into scientific drawing, and such help as is practicable in this line is given.

1. Elementary.—See *a* and *b* of course 2. Open to all students but arranged especially for students in Engineering.

2 hrs., 1st semester. (CLARK.)

2. Elementary Drawing, Light and Shade, Still-Life, and Landscape.—*a.* Leaves and trees in flat tints with a linear study of their artistic and geometrical composition. *b.* Perspective principles involved in drawing objects of geometrical structure. *c.* Drawing still-life material in light and shade, in pencil; with especial attention to the interpretation of local color values. *d.* Study of the use of line in form, texture, and surface interpretation. *e.* Landscape, in pencil, pen, or wash.

The course is designed to give students as much power in drawing as one year's study can give, and is also intended as a preparation for further work in the department. Those who wish may make it a two years' course. Open to all students.

3 hrs., both semesters. (CLARK.)

3. Drawing and Painting.—Open to those who have had course 2 or its equivalent.

3 to 5 hrs., both semesters. (BROWN.)

4. Scientific Perspective.—*a.* Theory of perspective and applications to assumed problems, with instruments. *b.* Principles of perspective in actual problems from nature. [Course 4 will not be given in 1898-99.]

2 hrs., 2d semester. (CLARK.)

5. The Head.—From cast and life.

3 to 5 hrs., 1st semester. (FISKE.)

6. Life Drawing.—The figure, from cast and life.

3 to 5 hrs., both semesters. (FISKE.)

CIVIL ENGINEERING.

Professors C. D. MARX, WING, and HOSKINS, and Assistant Professor FISH.

Students intending to make Civil Engineering a major are advised, though not required, to present among their entrance subjects, Advanced Algebra, Solid Geometry, Trigonometry, Physics, Drawing, and French or German. Special students should have completed English, Elementary Algebra, and Plane Geometry.

I. GENERAL WORK.

Linear Drawing and Descriptive Geometry.

1a. Linear Drawing and Lettering.—(Six hours a week, first half of first semester.) Course 1*a* is open to all students, and is required of students in Engineering.

1 hr., 1st semester. (FISH.)

1b. Descriptive Geometry.—Including shades, shadows, and perspective. (Lectures and recitations, two hours a week, drafting, six hours; second half of first semester, and second semester.) Course 1*b* is open to students who have completed solid geometry and 1*a*, and is required of students in Engineering. [Students of the Mathematical Department who desire only the lectures will register for one hour the first semester, and two hours the second semester.]

2 hrs., 1st semester; 4 hrs., 2d semester. (FISH.)

Applied Mechanics.

2. Applied Mechanics.

a. Graphic Statics.—This course begins with a discussion of the general theory of complanar forces applied to a rigid body. The principles relating to the composition, resolution, and equilibrium of forces are deduced graphically, and graphic methods are given for the solution of statical problems. Then follow applications to the determination of stresses in simple framed structures, including trusses sustaining both fixed and moving loads. The determination of centroids and moments of inertia of plane areas is then taken up, but this subject is treated only so far as it has useful applications in the solution of problems in the design of structures. (Lectures and recitations three hours a week, drafting six hours; first ten weeks of first semester.)

b. Mechanics of Materials.—Under this head are treated the strength and elastic properties of the ordinary materials of engineering. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion and shafts; repeated stress; sudden stress and resilience. (Lectures and recitations five hours a week for twelve weeks, following course 2*a*.)

c. Hydrostatics and Hydraulics.—This course treats of fluid pressure, the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits, and in open channels. (Lectures and recitations five hours a week for twelve weeks, following course 2*b*.

Open to students who have completed courses 1, 2, 3, 4, and 5 in Mathematics; required of all students in Civil Engineering.

5 hrs., both semesters. (HOSKINS.)

3. Testing of Materials.—In this course each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, timber, brick, stone, and cement. A careful record of all experiments is required of every student. The course may be elected without cement testing, in which case the credit is two hours. Open to all students who have taken or are taking course 2*b*; required of all students in Civil Engineering.

3 hrs., 2d semester. (HOSKINS.)

II. SPECIAL WORK.

Topographical and Geodetic Engineering.

4a. Elementary Surveying.—This course treats of surveying instruments and their adjustment, followed by the study of the various methods of surveying and their application in actual field work. The drafting of the course includes topographical mapping and sketching. (Lectures and recitations, two hours; drafting and field work, nine hours.) Open to students who have completed courses 1, 2, 3, and 4, in Mathematics, and 1*a* in Civil Engineering; required of all students in Civil Engineering and Topographic Geology.

5 hrs., 1st semester. (FISH.)

4b. Elementary Surveying.—An abridgment of course 4*a*, intended for Mechanical and Electrical Engineers. (Lectures,

field work, and drafting to take up six hours per week.) Open to students who have completed courses 1, 2, 3, and 4, in Mathematics and 1*a* in Civil Engineering.

2 hrs., 1st semester. (FISH.)

5a. Geodesy.—The adjustment of observations. Lectures. Open to students who have completed courses 1, 2, 3, 4, and 5, in Mathematics, and 4*a* in Civil Engineering.

2 hrs., 1st semester. (FISH.)

5b. Geodesy.—Methods of base line and angle measurements, geodetic levelling, and map projections. (Lectures, two hours; computations and drafting, three hours.) Open to students who have completed courses 4*a* and 5*a*; required of students who have their major in Geodetic Engineering.

3 hrs., 2d semester. (FISH.)

Railroad Engineering.

6. Economic Theory of Railroad Location.—Including Railroad Surveying, Location, and Construction. (Lectures and recitations, two hours; drafting and field work, nine hours.) Open to students who have completed course 4*a* in Civil Engineering; required of all students in Civil Engineering.

5 hrs., 2d semester. (FISH.)

7. Railroad Operation and Management.—Lectures and recitations. [Course 7 will not be given in 1898-99.]

3 hrs., 1st semester.

It is the intention to offer ultimately a special course in Railroad Engineering in connection with the department of Economics. The collection of railroad books in the Hopkins Library offers exceptional opportunities for research in this line.

Structural Engineering.

8. Elements of Design.

a. Materials.—The end sought is a knowledge of the physical properties and methods of manufacture of constructive materials, which will lead to the design of safe and economical engineering structures. This includes a study of the growth, supply, and preservation of timber trees, the mineralogy and metallurgy of iron, quarrying, stone cutting, and manufacture of masonry materials, with methods of testing and selecting materials for a given purpose.

b. Details.—The work is elementary in character, dealing with the applications of the principles of Mechanics to the design of structural details. Wooden joints, riveted joints, pin-connected joints, and masonry details are taken up in order.

c. Design.—The work is intended for general application to the design of structures. The work of course 2*a* (and *b*) is extended to the analytical and graphical determination of stresses in highway bridge trusses, girders, and mill buildings. Designs of sub- and superstructure, with working drawings, bills of material, and estimate of cost, are made.

Open to students who have completed course 1, and who have completed or are taking course 2; required of all students in Civil Engineering.

5 hrs., both semesters. (WING.)

9. Railway Bridges.—Open to students who have completed course 8. The stresses in modern types of railroad bridges are determined, including cantilever, swing, and suspension spans, masonry arches, and arch ribs. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared as a basis for estimating the cost.

5 hrs., both semesters. (WING).

Hydraulic Engineering.

12. Water Supply Engineering for Towns and Districts.—Sources of Supply. Collecting and storing of water either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2, 3, 4, and 8; required of all students who take their major in Hydraulic Engineering.

5 hrs., 1st semester. (MARX.)

13. Sanitary Engineering.—Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2, 3, 4, 8, and 12; required of all students who take their major in Hydraulic Engineering.

5 hrs., 2d semester. (MARX.)

14. Hydraulic Motors —A discussion of the theory of the main types of turbines. Special attention is given to the application of graphic methods to the solution of some of the main problems in turbine design. A few lectures on the general theory of energy and on relative motion are given as an introduction to the course. Open to students who have completed course 2.

3 hrs., 1st semester. (HOSKINS.)

15. Construction of Canals, River and Harbor Improvements.—Lectures and Designing as per arrangement. Open to students who have completed courses 2, *a*, *b*, *c*, 3, 4, and 8.

2 hrs., both semesters. (MARX.)

16. Technical Seminary.—Study of German and French Technical Journals. Open only to fourth year students in Civil Engineering.

2 hrs., both semesters. (MARX.)

MECHANICAL ENGINEERING.

Professor A. W. SMITH, Assistant Professor G. H. MARX, and Assistants PETERSON, SOULE, and AYRES.

The following courses in Mechanical Engineering are offered. In connection with these the student takes courses in Mathematics, pure and applied Mechanics, Chemistry, Physics, and Drawing, thus making up the professional part of the course, and may also elect such work from the general courses as time and preparation admit.

Students intending to make Mechanical Engineering a major are advised, though not required, to present among their entrance subjects, Advanced Algebra, Solid Geometry, Trigonometry, Physics, Drawing, French or German. Special students should have completed English, Elementary Algebra, and Plane Geometry.

1. Shop Work.

a. *Woodworking.* (Three exercises a week, half year.)

b. *Pattern Making.* (Three exercises a week, half year.)

c. *Forge Work.* (Three exercises a week, half year.)

d. *Foundry Work.* (Three exercises a week, half year.)

e. *Machine-Shop Work.* (Three exercises a week, through the year.)

[*d* and *e* of course 1 will not be given in 1898-99.] Open to all students, and required of students in Mechanical Engineering.

3 hrs., each semester. (PETERSON, SOULE, AYRES.)

2. Elementary Machine Drawing.—This work consists of practice in making free-hand sketches of machine parts, from which working drawings, tracings, and blue prints are developed. (Six hours a week in drawing room.)

2 hrs., 1st semester. (G. H. MARX.)

3. Constructive Materials.—Study of the manufacture and physical qualities of materials. Intended to prepare the student for selection of materials for machine parts. Open to students who have had elementary Chemistry, and required of students in Mechanical Engineering.

3 hrs., 1st semester. (A. W. SMITH.)

4. Elementary Machine Design.—*a.* Function of Machines; Motion, Force, and Work in Machines. (Three hours a week, lectures and recitations.) *b.* A drafting course applying the principles treated in *a.* (Six hours a week, drafting.) Open to students who have completed Solid Geometry and required of students in Mechanical Engineering.

5 hrs., 2d semester. (G. H. MARX.)

5. Elementary Machine Design.—*a. Machine Elements.* Study of fastenings, bearings, sliding surfaces, etc., of cross sectional and outline forms and of machine support. (Two hours a week, recitations and lectures, six hours in the drafting room, first semester.) Open to students who have completed course 4, *a* and *b*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering. *b. Proportion of Stress Members of Machines*, including steam engines and boilers. (Two hours a week, lectures and recitations, six hours in the drafting room, second semester.) Open to students who have completed courses 4 and 5 *a*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering. [Not given in 1898-99.]

4 hrs., both semesters. (A. W. SMITH.)

6. Advanced Machine Design.—A drafting course intended for fourth year students who have completed course 5. [Not given in 1898-99.]

2 hrs., both semesters. A. W. SMITH.)

7. Steam Engineering.—Mechanical theory of heat and its applications. Lectures and recitations. (Text-book: Ewing's Steam Engine.) Required of third year students in Mechanical Engineering. [Not given in 1898-99.]

2 hrs., both semesters. (A. W. SMITH.)

8. Steam Engineering.—Mechanical laboratory. Testing of Engines and boilers, and experimental investigation of correlated problems. Open to students who have completed course 7, and required of students in Mechanical Engineering.

2 hrs., both semesters. (G. H. MARX.)

9. Pumping Machinery.—A lecture course for fourth year students. [Not given in 1898-99.]

2 hrs., 2d semester. (A. W. SMITH.)

10. The Development and Transmission of Power.—A study of nature's available energy and its use in engineering. Special attention is paid to fuels and the financial efficiency of the prime movers and systems of power transmission. Lectures and written reports. Open to fourth year students.

2 hrs., 1st semester. (G. H. MARX.)

Shop and Laboratory Fees.—Three dollars per semester in courses 1*a* and 1*b*; four dollars per semester in course 1*c*; two dollars per semester in course 8.

ELECTRICAL ENGINEERING.

Professor PERRINE, and Instructor FARMER.

Believing that American practice has justified the separation of the Electrical Engineer from the Electrical Manufacturer, and that it has defined the Engineer to be one who is engaged upon the solution of practical problems by the aid of obtainable apparatus, the Electrical Engineering courses have been planned for the constructor of engineering works rather than for the manufacturer of machinery. While keeping this end in view the rapid changes in the profession have not been lost sight of, and the underlying principles of correct design are dwelt upon to such an extent as will fit the Engineer to arrive at just decisions on the merits of established or proposed methods.

In the first four years of university work in Electrical Engineering the course is so arranged that, before entering on the studies directly connected with this Department, the student pursues courses in Mathematics, Mechanics, Physics, and Chemistry; and at the same time that the Electrical Engineering courses are taken, collateral work is carried on in the practice and theory of electrical measurements and mechanical construction.

Students intending to make Electrical Engineering a major are advised, though not required, to present among their entrance subjects, Advanced Algebra, Solid Geometry, Trigonometry, Physics, Drawing, French or German. Special students should have completed English, Elementary Algebra, and Plane Geometry.

Attention is called to the fact that the first four years do not complete the course in Electrical Engineering, but that candidates for the degree of *Engineer* in Electrical Engineering are required to continue their course through a fifth year.

UNDERGRADUATE COURSES.

1. Constructive Materials and Machinery.—*a*. Materials and methods of line construction for electric lighting, electric railways, power transmission, telegraphs, and telephones. (First semester.) *b*. The elements of dynamo machine design, with the discussion of the principles involved as exemplified in existing American apparatus used in lighting, power transmission, mining, etc. (Second semester.) Two hours lectures and recitations, three hours drafting. Open to students who have completed course 2 in Physics.

3 hrs., both semesters. [PERRINE.]

2. Engineering Measurements in Electricity and Magnetism.—(Two hours lectures and recitations, and two exercises in the laboratory.) A study of the elements of electricity and magnetism applied to the theory of measurements used in engineering investigations. Open to students who have completed course 1 in Physics, and expected of those carrying course 1 in Electrical Engineering.

4 hrs., both semesters. (FARMER.)

3. Electrical Instrument Construction.—(Two exercises shop working.) Practice in the construction of testing apparatus, small motors and dynamos, switches, arc lamps, and other appliances.

2 hrs., both semesters. (PERRINE, FARMER.)

4. The Elements of Electrical Engineering.—A course of lectures and recitations, with laboratory exercises; including a general review of the subjects of electrical measurements, the elements of dynamo machine design, and its applications in the choice of generators, motors, and transformers. The principles of primary and secondary batteries, the elements of the application of electricity to lighting by arc and incandescent lamps, and a general review of electrical railroad construction and operation. This course is intended for those who are not major students in Electrical Engineering and is designed to give only an elementary understanding of the general applications of electricity to the commoner purposes of electric lighting and power transmission; so much of the theory of electricity and magnetism being given as will enable the student to understand the methods of everyday application. The course will be similar to that given in Slingo & Brooker's text book of Electrical Engineering. Open to all students who have completed course 1 in Physics, or its equivalent.
2 hrs., both semesters. (FARMER.)

5. Central Station Design and Management.—The fundamental principles of designing central stations for electric lighting plants and railroads, writing of specifications, awarding contracts, selecting machinery, management and finance of electric plants. Lectures and recitations. Open to students who have completed course 1. *2 hrs., both semesters.* (PERRINE.)

6. Engineering Problems.—Exercises in the laboratory performing engineering tests and measurements, and a discussion of problems involving their complete application.
2 hrs., both semesters. (PERRINE.)

7. The Theory of Electricity and Magnetism.—Including Elementary Alternating Currents. A continuation of course 2, in which the theory of electricity and magnetism will be more completely developed. J. J. Thompson's *Electricity and Magnetism* and Bedell & Crehore's *Alternating Currents* will be used. Open to students who have completed course 2, and intended as an introduction to course 8. *4 hrs., 1st semester.* (PERRINE.)

8. Alternating Current Working.—The practical principles of generating and transmitting alternating currents of electricity. A course of lectures and recitations based on D. C. and J. P. Jackson's *Alternating Currents.* Open to students who have completed course 7. *4 hrs., 2d semester.* (PERRINE.)

9. Engineering Law.—A course in contracts and general business law designed chiefly for students in Engineering. Does not count toward graduation.

2 hrs., 2d semester. (ABBOTT.)

10. Recent Applications of Electricity.—A free discussion of the newest applications of electricity appearing in the technical journals.

1 hr., both semesters. (PERRINE.)

In connection with course 10 it is aimed to have as many special lectures as possible. The following have been given in 1897-98: F. P. MEDINA—(1) *Simple Morse Telegraph Working;* (2) *The Duplex and Quadruplex.* T. E. THEBERATH—*The Apparatus of the Stanley Electric Mfg. Co.* W. STUART-SMITH—*Electricity on Shipboard.* F. F. BARBOUR—*Power Transmission Apparatus of the General Electric Co.* Mr. STOCKDALE—*Alternating Current Apparatus of the General Electric Co.*

The department acknowledges free copies of the following journals to be used in this course: *Electrical Engineering*, Chicago; The *Electrical World*, New York; The *Electrical Journal*, Chicago; The *Western Electrician*, Chicago; The *Journal of Electricity*, San Francisco; The *India Rubber World*, New York.

FIFTH YEAR COURSES.

During the fifth year some of the following subjects will be studied, and one of them chosen for special attention.

11. Dynamo Machinery Design.—The theory and practice of the mechanical and electrical design of direct and alternating current generators and motors.

12. The Theory and Practice of the Design of Inductive Apparatus.

13. Telegraphy and Telephony.—The design and construction of telegraph and telephone lines, apparatus, and switch boards.

14. Special Applications for Electricity.—Apparatus for electric welding, mining, metallurgy; electrolysis in tanning, bleaching, purification of sewage, etc.

Laboratory Fees.—One dollar per semester in course 1; three dollars per semester in courses 2 and 6.

UNIVERSITY EXTENSION.

Standing Committee: Professor HUDSON, *Chairman;* Professors ROSS, ANDERSON, JENKINS, GRIGGS.

The organization of University Extension societies is not undertaken by the University, but its instructors are, in general, prepared to respond to any demands for courses of lectures not conflicting with University duties. They are also willing, whenever occasion arises, to undertake work in Teachers' Institutes, and to take part in lecture courses in neighboring towns.

In addition to a large number of single lectures delivered in the various cities and towns of the State, the following more extended courses of work were presented during 1897-98:

1. **The American Revolution.**—*Eight lectures* in San Jose; *six lectures* in Portland, Oregon; *three lectures* in San Francisco. Professor DUNIWAY.

2. **Goethe's Faust.**—*Seven lectures* in San Francisco. Professor GOEBEL.

3. **Moral Education.**—*Four lectures* in San Francisco and Santa Rosa. Professor GRIGGS.

4. **Goethe's Faust.**—*Eight lectures* in San Jose; *five lectures* in Napa; *twenty lectures* at the Coronado Summer School. Professor GRIGGS.

5. **The Divine Comedy of Dante.** — *Six lectures* in San Francisco before the Channing Auxiliary; *seven lectures* in San Francisco before the Teachers' Club. Professor GRIGGS.

6. **Self-Culture.**—*Three lectures* in Pacific Grove. Professor GRIGGS.

7. **Tennyson and Browning.** — *Twenty lectures* at the Coronado Summer School. Professor GRIGGS.

8. **The Ethics of Personal Life.**—*Twenty lectures* at the Coronado Summer School. Professor GRIGGS.

9. **The Spiritual Functions of Modern Poetry.**—*Three lectures* in Oakland. Professor GRIGGS.

10. **Three Great Teachers of the Nineteenth Century.**—*Three lectures* in San Francisco. Professor HUDSON.

11. Shakspere and the Romantic Drama.—*Six lectures* in San Francisco. Professor HUDSON.

12. Science Teaching.—*Two lectures* in Pacific Grove; *three lectures* in Vallejo. Professor JENKINS.

13. Nature Study.—*Four lectures* in Antioch; *eight lectures* in Oakland. Professor JENKINS.

14. The Ethics of the Bible.—*Three lectures* in Berkeley. Professor SHOW.

15. The Kingdom and Wisdom of Solomon.—*Two lectures* in Berkeley. Professor SHOW.

UNIVERSITY LECTURES, ETC.

Public lectures on subjects of general interest, by members of the Faculty or by persons invited from abroad, are given in the Chapel, usually on Tuesday evenings. The following is the list of such lectures from March, 1897, to March, 1898:

Professor MELVILLE B. ANDERSON.—*1. Readings from Browning. 2. The Nature and Functions of Literature.*

President DAVID S. JORDAN.—*1. The Fur Seal as an International Issue. 2. The Yellowstone Park*, with lantern illustrations. *3. Consumption and Oxytuberculin. 4. What Youth is For. 5. "There runs no Law of God nor Man to the North of Fifty-three." 6. "After the Ball." 7. The Evolution of Fishes*, with lantern illustrations.

President JORDAN, Professor BRUN, and Professor ABBOTT. *The* Lettre de Cachet *in California.*

Miss HELEN KELLEHER, San Francisco.—*Picturesque California*, with lantern Illustrations.

The Rev. JAMES MCDONALD, San Francisco.—*Joan of Arc.*

Mrs. HELEN H. GARDNER, New York.—*Heredity.*

Professor CLYDE A. DUNIWAY.—*The Reaction Against Democracy.*

Professor EDWARD H. GRIGGS.—*A Walk in Florence.*

Professor EDWIN D. STARBUCK.—*Adolescence.*

Professor ALBERT W. SMITH.—*Hawaii*, with lantern illustrations.

Professor A. T. MURRAY.—*Greek and English Idylls.*

Col. JAMES JACKSON, U. S. A.—*The Modoc War*, with lantern illustrations.

Miss HELEN M. MACGILLIVRAY.—*Ian Maclaren.*

Miss MARGARET E. SCHALLENBERGER.—*The George Junior Republic.*

Professor H. R. FAIRCLOUGH.—*The Intellectual Character of Greek Social Life.*

Professor WALTER MILLER.—*How I Became a Captain in the Greek Army.*

Professor WALDEMAR LINDGREN.—*The Great Cañon of the Snake River.*

The Rev. L. W. MUNHALL, D. D., Philadelphia.—*The Bible.*

Commander BOOTH-TUCKER, New York.—*The Salvation Army.*

Lieutenant R. E. PEARY, U. S. N.—*Explorations in Northernmost Greenland.*

President DAVID S. JORDAN.—*The Story that Transformed the World.*

HADJI EPHRAIM BENQUIAT, San Francisco.—*Manufacture and History of Persian and Oriental Rugs.*

Commencement Address—May 26, 1897.

Professor OLIVER P. JENKINS.—*The Passing of Plato.*

George Washington Memorial Addresses—February 21, 1898.

President DAVID S. JORDAN: *The Need of a National University.*

Professor JOHN C. BRANNER: *The Scientific Bureaus at Washington.*

Professor CLYDE A. DUNIWAY: *The National Library.*

Founder's Day Address—March 9, 1898.

The Hon. FRANCIS E. SPENCER, San Jose.—*The Public Life of Leland Stanford.*

Intercollegiate Debates, Etc.

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of Stanford and of the University of California, is held in San Francisco in April of each year. A silver medal of the value of one hundred dollars has been offered by the San Francisco *Examiner* to the University first successful in three contests.

The question for 1898 is, "*Resolved*, That the system of unrestricted production of prison-made goods, for sale in the open market, on the public account, is preferable, as a system of prison management, to that which is in operation in the State of New York."

The contestants from Stanford are Messrs. SAMUEL G. BAILIE, JAMES FERGUSON, and ANDREW B. MORGAN.

The CARNOT MEDAL, for individual excellence in public speaking, given by the Baron de Coubertin, in honor of the late President Sadi-Carnot, is competed for by three representatives each of Stanford and of the University of California. The subject for 1898 was, "*Resolved*, That in the light of experience, further extension of the French Colonial System would be impolitic."

The contestants from Stanford were Messrs. ANDREW B. MORGAN and ANTHONY H. SUZZALLO, and Miss ANNA STRUNSKY

THE UNIVERSITY CHAPEL.

UNIVERSITY CHAPEL UNION.

Executive Committee: Professor W. W. THOBURN, *Chairman;* Mr. WALTER CLARK, *Treasurer;* Professor WALTER MILLER, Professor A. B. SHOW, Dr. O. L. ELLIOTT, Mr. E. B. WIGHT, Mrs. M. R. SMITH, Mrs. E. F. LITTLE, Miss MARYLYN MAIN, Mr. A. W. GREELEY.

Mr. W. F. HYDE, *Chorister;* Mrs. ANNA D. STARBUCK, *Organist.*

The following is the list of speakers and subjects, March, 1897, to March, 1898, in the University Chapel, Sunday mornings at eleven o'clock, in accordance with the provision noted on page 27:

The Rev. CHARLES W. WENDTE, Oakland.—*Where to Place the Emphasis in Life.*

ANAGARIKA H. DHARMAPALA, India. — *The Psychology of Buddhism.*

The Rev. GEORGE C. ADAMS, San Francisco.—*The Preaching of the Cross.*

The Rev. L. H. HALLOCK, Mills College.—*Knowledge of God.*

Professor W. W. THOBURN.—*1. The Higher Life in the University. 2. The Way. 3. New Wine and Old Bottles. 4. Rest. 5. Nature and God.*

The Rabbi JACOB VOORSANGER, San Francisco.—*1. Is the World True to its Ideals? 2. The Development of the Messianic Idea. 3. The Paganism of Modern Society.*

The BRAMACHARIN BOBHABHESKSHU, India.—*Religion as a Science.*

The Rev. H. Melville Tenney, San Jose.—*Burden Bearing for Ourselves and Others.*

President David S. Jordan.—*1. The Unnamed Church. 2. The Human Reaction. 3. If Sin Entice Thee?*

The Rev. Horatio Stebbins, D. D., San Francisco.—*Belief and Life.*

Professor Amos G. Warner.—*1. In Default of Demonstration. 2. The Triumph of Evil. 3. When Changes Come. 4. Vicarious Sacrifice.*

The Rev. William A. Brewer, San Mateo.—"*Quit You Like Men.*"

The Rev. S. M. Jefferson, D. D., Berkeley.—*Pharisee and Publican.*

Dr. O. L. Elliott.—*1. Tempted of God. 2. The Larger Life.*

The Rev. E. R. Dille, D. D., Oakland.—*Certainties in Religion.*

Professor A. T. Murray.—*Prayer.*

Professor J. H. Goodell, Pacific Theological Seminary, Oakland.—"*No one Liveth to Himself.*"

Professor William H. Hudson.—*Faith and Life.*

Professor Joseph LeConte, University of California.—*The True Idea of a University.*

Professor Edwin D. Starbuck.—*The Gospel of the Mature Life.*

Baccalaureate Sermon—May 23, 1897.

The Rev. John K. McLean, D. D., Oakland.—*The Noble Army of Intercessors.*

UNIVERSITY ASSOCIATIONS.

PHILOLOGICAL ASSOCIATION.

Professor A. T. Murray, *President;* Professor F. J. A. Davidson, *Secretary.*

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing the results of scientific investigations in language and literature. The membership consists of the instructors and graduate students in the different language departments of the University. The regular time of meeting is the last Thursday of each academic month, at 2 P. M. The following papers were presented between March, 1897, and March, 1898.

April 1, 1897. Professor A. G. NEWCOMER—*Translations from Pindar.* Professor J. C. BRANNER—*Some French Place-Names in Arkansas.*

April 29. Professor K. G. RENDTORFF—*Heinrich Leopold Wagner in his Relation to Goethe's Faust.*

May 20. Professor JULIUS GOEBEL—*Charles Sealsfield.*

September 30. Professor WALTER MILLER—*Menippus.*

October 28. Professor WALTER MILLER—*Menippus* (conclusion). Professor F. J. A. DAVIDSON—*The Origin of the Sestina.*

November 18. Professor O. M. JOHNSTON—*Syntactical History of the Atonic Personal Pronouns in Italian.* Professor E. M. PEASE—*Interpretation of Horace, Satires, I, v, 16ff.*

December 20. Professor JULIUS GOEBEL—*The Relation of Heine to Wolfgang Menzel.* Professor A. T. MURRAY—*A Note on Euripides.*

January 27, 1898. Professor H. R. FAIRCLOUGH—*The Connection between Music and Poetry in Greek Literature.* Professor O. M. JOHNSTON—*The use of* le, la, les *before* me, te, nous, vous, lui, leur *in Old French.*

February 24. Professor EWALD FLÜGEL—*Bacon's Historia Litteraria.* Professor E. M. PEASE—*A Species of the Adverbial Accusative in Latin.*

March 24. Professor A. T. MURRAY—*The Problem of the Alcestis.*

SCIENCE ASSOCIATION.

Professor J. C. BRANNER, *President;* Professor F. M. MCFARLAND, *Secretary.*

The following papers were read before the University Science Association between March, 1897, and March, 1898:

Professor WILLIAM R. DUDLEY—*The High Sierras of Kern County, California.*

Professor CHARLES H. GILBERT—*Some Former Tributaries of the Sacramento River.*

Professor RUFUS L. GREEN—*The Quadrature of the Circle.*

Professor FRANK M. MCFARLAND—*The Experimental Determination of the Function of the Cell Nucleus in Heredity.*

Professor CHARLES N. LITTLE—*What is a Quaternion.*

President DAVID S. JORDAN—*Science and Diplomacy.*

Professor OLIVER P. JENKINS—*The Nature of the Nervous Impulse.*

SUMMER COURSES.

The following regulations apply to approved Summer Courses of study:

1. Summer Courses for which credit is desired, whether taken in the Summer Schools, or by special arrangement, must be regularly registered in advance at the Registrar's Office.

2. Duly authorized Summer Courses at the University (or at the Hopkins Seaside Laboratory) may receive the same credit as the same amount and kind of regular University work. For this purpose sixteen weeks shall be considered a full semester; and courses running four, six, eight, or more weeks shall be estimated at the proper fractional equivalent of a full semester's work. For summer courses of four, six, or eight weeks students may register for not more than four, six, or eight hours respectively; and no student shall receive more than ten hours of University credit for work done during any summer vacation.

3. Persons taking preparatory subjects in the Summer Schools, or at other times under approved tutors, may receive credit only upon passing the regular entrance examinations. Special examinations, at other times than those announced in the REGISTER, will not be granted.

4. [For the conditions governing special courses, not taken in the University Summer School or the Hopkins Seaside Laboratory, see page 46.]

[*The usual Summer Courses at the University will be omitted in 1898.*]

THE HOPKINS LABORATORY.

Professors JENKINS and GILBERT, Directors.

The Hopkins Seaside Laboratory, founded by the liberality of Mr. Timothy Hopkins, of San Francisco, is a branch of the biological work of the University, holding its sessions during the summer months. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture room, seventeen private rooms for special investigators, and a dark room for photography. They are provided with aquaria and running water, and all necessary

facilities for biological study. The library and apparatus of the University are available for use in the laboratory.

The Laboratory makes provision for three classes of students:

1. Students in the Zoological, Physiological, and Botanical Departments of the University who wish to supplement their studies with work on living marine organisms under the favorable conditions of such a station.

2. Investigators who are prepared to make researches in marine biology, for which the Pacific Coast with its almost unworked field offers exceptional attractions.

3. Teachers or others who desire to become acquainted with marine animals and plants, and to learn the practical methods of their study.

Session of 1897.

The sixth session of the Laboratory was held during the summer of 1897, beginning June 7th.

The following were in attendance:

I. INSTRUCTORS.

GEORGE CLINTON PRICE, B. S., Assistant Professor of Zoology, Leland Stanford Junior University.

WALTER ROBERT SHAW, A. M., Instructor in Botany, Leland Stanford Junior University.

HAROLD HEATH, A. B., Fellow in Zoology, University of Pennsylvania.

II. THOSE OCCUPYING INVESTIGATORS' ROOMS.

C. L. ANDERSON, M. D., Physician, Santa Cruz.

HERBERT P. JOHNSON, Ph. D., Assistant Professor of Biology, University of California.

FRANK MACE MCFARLAND, Ph. D., Associate Professor of Histology, Leland Stanford Junior University.

GEORGE A. TALBERT, Teacher of Science, High School, West Superior, Wis.

III. THOSE TAKING REGULAR COURSES.

JAMES FRANCIS ABBOTT, Student in Zoology, University.

IDA BEERMAKER, Student in English, University.

STEWART DANIEL BRIGGS, A. M., Teacher in High School, San Bernardino.

ALBERT E. CHANDLER, Teacher in High School, Watsonville.

William Austin Cannon, Student in Botany, University.

Bertha Louise Chapman, A. B., Student in English, University.

Charles Carroll Chapman, Student in Manzanita Hall, Palo Alto.

Alice Church, Teacher in Public Schools, Eureka.

Matie Pearl Clark, Student in English, University.

Newton Cleaveland, Student in Physiology, University.

Rheinart P. Cowles, Student in Chemistry, University.

Florence Eugenia Dorsey, Student in Entomology, University.

Lewis Lindsay Dyche, M. S., Professor of Zoology, University of Kansas.

Arthur Jordan Edwards, Student in Physics, University.

Alexandra Fay, Student in Education, University.

Susan M. Forrest, Teacher in Public Schools, Stockton.

Lottie F. Grunsky, Teacher in Public Schools, Stockton.

Parnie O. Hamilton, Student in German, University.

Edith S. Hammond, Student in Physiology, University.

Lucy Harris, Teacher in Public Schools, Stockton.

Grace Johnson, Student in English, University.

Harold Jordan, Student in Belmont School, Belmont.

Mary Ettie Kinney, Teacher of Zoology, State Normal School, San Jose.

Louis Samuel Kroeck, A. B., Instructor in Biology, University of the Pacific.

Mrs. L. D. Lawhead, Teacher in Public Schools, Stockton.

E. P. Liesy, Teacher in Public Schools, Stockton.

Jeremiah Beverley Lillard, Student in Physiology, University.

Nelson Dorrington Miller, Student in Law, University.

Ada Loraine Morley, Student in Castilleja Hall, Palo Alto.

Harriet Mason Morton, Student in Entomology, University.

W. H. Murray, Teacher in Public Schools, Stockton.

Mary E. Norton, Teacher in Public Schools, Stockton.

Henry Samuel Patterson, Student in Economics, University.

Adelaide L. Pollock, Teacher in Public Schools, Stockton.

Wilmatte Porter, Student in Physiology, University.

Flora A. Randolph, Teacher in Private School, Montecito.

Walter Clarence Rodgers, Student in Law, University.

Frank Stallo Ruddell, Student in Law, University.

Alice B. Smallfield, Teacher in Public Schools, Stockton.

William Appleton Snow, M. S., Assistant in Entomology, University.

Nettie Maria Stevens, Student in Physiology, University.

Thomas Andrew Storey, A. B., Assistant in the Gymnasium, University.

Thomas More Storke, Student in Economics, University.

Benjamin Thomas, A. B., Student in Physiology, University.

Clarence Lot Thomas, Student in History, University.

J. H. Wilkinson, Teacher in Public Schools, Stockton.

Session of 1898.

The session of 1898 will begin Monday, June 6th, the regular course of instruction continuing until July 16th. Investigators or advanced students may arrange to continue their work throughout the summer. For the benefit of teachers whose vacations begin late in the summer, the elementary course in Zoology will be repeated, beginning about July 1st. A circular containing detailed information concerning the work of the Laboratory may be had on application to the Registrar or to the Directors.

Fees.—To investigators, the facilities of the Laboratory are offered free. All others will be charged a fee of twenty-five dollars.

Catalogue of Students.

Abbott, James Francis,	*Greeley, Col.*,	Zoology
Abbott, Philip Fanning,	*Oakland*,	English
Abe, Frank K.,	*Miyagi, Japan*,	Economics
Abrams, Le Roy,	*Inglewood*,	Botany
Acworth, Edith Marion,	*Palo Alto*,	French
Adams, Bristow,	*Washington, D. C.*,	Drawing *Sp.*
Adams, Frank,	*Wrights*,	Economics *Sp.*
Adams, Frank Hardin,	*Spokane, Wash.*,	Latin
Adams, Katharine,	*Wrights*,	Hygiene
Adams, Marion,	*Wrights*,	History
Adams, Paul Allen,	*Helena, Mont.*,	Physiology
Adams, Ruth Ellis,	*Pomona*,	Economics *Sp.*
Alcott, Robert Kerr,	*Elgin, Ill.*,	Economics
Alden, Mary Estelle,	*Campbell*,	English
Alderman, Rupert Lewis,	*Santa Clara*,	History
Alford, Bertha Marion,	*Palo Alto*,	Latin
Allan, Leigh,	*Tacoma, Wash.*,	Mathematics
Anderson, Blanche Josephine,	*Oberlin, O.*,	History
A. B., Oberlin Coll., 1890.		
Anderson, Faith,	*Palo Alto*,	Latin
Anderson, Jennie Claire,	*Oberlin, O.*,	History
Ph. B., Oberlin Coll., 1894; Ph. M., Univ. of Michigan, 1897.		
Anderson, Malcolm Playfair,	*Menlo Park*,	Physiology
Anderson, Manie,	*Gila Bend, Ariz.*,	Education *Sp.*
Anderson, Van Winkle,	*Vancouver Barracks, Wash.*,	Law
Andrews, Andrela Lillian,	*San Francisco*,	History
Anspacher, Philip Baum,	*San Francisco*,	History
Arnold, Ralph,	*Pasadena*,	Geology
Ashford, Percy Volney,	*Haywards*,	Law *Sp.*
Asmussen, Charles Lawrence,	*San Francisco*,	Law
Atherton, Celia Freeman,	*Lakeport*,	History
Atkinson, William Sacketon,	*Los Gatos*,	Zoology
Austin, Edith P.,	*Palo Alto*,	German *Sp.*
Avery, Clara Aurilla,	*Santa Cruz*,	English
A. B, Stanford, 1898.		
Ayer, Helen Evelyn,	*Milpitas*,	History
Bacher, Bertha Rachel,	*San Jose*,	German
Bacher, Johann Adolph,	*San Jose*,	Latin

Bacon, Dorothy Goodson,	*Omaha, Neb.*,	Botany
Bailey, Alice Ross,	*Silver City, N. M.*,	Mathematics
Bailey, Forrest Carter,	*San Jose*,	English
Bailey, Frank Joel,	*Buffalo, N. Y.*,	Civil Eng. *Sp.*
Bailey, Louis Hamilton,	*San Jose*,	Law
Bailey, Vivian,	*San Francisco*,	Ethics
Bailey, Willard Chapin,	*San Jose*,	Physiology
Bailie, Samuel Girvin,	*Los Angeles*,	Economics
Baird, Alvin Walter,	*Portland, Or.*,	Electrical Eng. *Sp.*
Baker, Charles Reinhold,	*San Francisco*,	Physiology *Sp.*
Ballantyne, Samuel,	*Ola, Idaho*,	Law
Ballard, Jessie May,	*Seattle, Wash.*,	History
Bankhead, William Robert,	*Loomis*,	Electrical Eng.
Barber, William Burton,	*Alameda*,	Geology
Barlow, Elizabeth Louisa,	*Petaluma*,	Education
Barnard, Maryline E.,	*Ventura*,	Physiology *Sp.*
Barneberg, Grace Elizabeth,	*San Luis Obispo*,	History
† Barnett, John Felix,	*Ukiah*,	History
A. B., Stanford, 1897.		
Barnhisel, Edith Mary,	*San Jose*,	Physiology
Barnwell, Susie Dale,	*Los Angeles*,	English
Barstow, Alfred,	*San Jose*,	English
A. B., Stanford, 1895.		
Bartlett, Corinne Lawrence,	*San Francisco*,	English *Sp.*
Bartruff, Zoë Sara,	*Bellefonte, Pa.*,	English
Bauer, Hamilton A.,	*San Francisco*,	Law
Baum, Frank George,	*San Jose*,	Electrical Eng.
Beach, Walter Greenwood,	*Marietta, O.*,	History
A. B., Marietta Coll., 1888; A. B., Harvard, 1891; A. M., 1892.		
Beach, Wesley Heman,	*Colton*,	Latin
Bean, Harry Joel,	*San Jose*,	Electrical Eng.
A. B., Stanford, 1897.		
Beard, Edna Belle,	*Modesto*,	English
Beck, Edith Tully,	*Greensburg, Ind.*,	English
A. B., De Pauw Univ., 1895.		
Beckett, George Marion,	*College Park*,	Law
Beckley, Henry Pitman,	*Honolulu, H. I.*,	Law
Beedy, Louis Samuel,	*Sausalito*,	Law
Beedy, Winslow Lindhard,	*Stanley, B. C.*,	Economics *Sp.*
Beermaker, Ida Amanda,	*San Jose*,	English
Belknap, Virginia,	*Carson, Nev.*,	Ethics
Bell, Alberta,	*Paso Robles*,	English

Bell, Annie May,	*Visalia,*	English
Bell, Henry Herman,	*Eureka,*	Geology
Bell, William Lawrence,	*Bradford, Pa.,*	Chemistry
Bell, William Nay,	*Tracy,*	Civil Eng.
Bellman, Isabella,	*San Francisco,*	Ethics *Sp.*
Bennett, Frank Waite,	*Phœnix, Ariz.,*	Mathematics
Benson, Henry Wilson,	*Kelseyville,*	Electrical Eng. *Sp.*
Bentley, James Andrew,	*Modesto,*	Education
Berdine, Carrie Ellis,	*Stockton,*	Education *Sp.*
Berry, Fred Leslie,	*Ogden, Utah,*	Law
Bethel, Ettilla,	*Henderson, Ky.,*	French

A. B., Indiana Univ., 1897.

Bidwell, Rolfe Bishop,	*Los Angeles,*	Law *Sp.*
Biglow, David Carlton Orvis,	*Antioch,*	Law
Birdsall, Kathrine,	*Oakland,*	German
Birtch, Fayette,	*Santa Barbara,*	Physiology
Blackstone, Henry Winthrop,	*Los Angeles,*	Law *Sp.*
Blake, William Ford,	*Westside,*	Physiology

A. B., Stanford, 1896.

Bloch, Benjamin I.,	*Boise, Idaho,*	History
Bolton, Arthur Lawrence,	*Berkeley,*	Zoology *Sp.*
Bonnell, John Kester,	*Palo Alto,*	English
Borglum, Theodora,	*Omaha, Neb.,*	English
Borgquist, Alvin,	*Gunnison, Utah,*	Ethics

B. S., Univ. of Utah, 1897.

Boring, Oramanda,	*Palo Alto,*	Zoology
Borough, Randal William,	*San Francisco,*	Drawing
Boston, Walter Morten,	*Durango, Colo.,*	History
Bowman, Larrey MacFarlane,	*Delphi, Ind.,*	English
Boyd, Hugh James,	*Riverside,*	Mathematics
Brace, Herbert Manning,	*San Francisco,*	English *Sp.*
Braden, Fred Bassett,	*Los Angeles,*	Law
Bradley, Christopher Mason,	*Tacoma, Wash.,*	English
Bradley, Oliver U.,	*Tacoma, Wash.,*	Economics
Bradley, Robert Melville,	*San Bernardino,*	Chemistry
Brand, Lottie Edith,	*San Francisco,*	German
Brantley, Henry Taylor,	*St. Louis, Mo.,*	English *Sp.*
Brasch, Frederick Edmund,	*Santa Clara,*	Mathematics *Sp.*
Breeden, Blanche Virginia,	*Portland, Or.,*	French *Sp.*
Bremner, Olney Edwin,	*Yulupa,*	Geology
Brewer, DeWitt Clinton,	*Binghampton, N. Y.,*	Civil Eng.

A. B., Stanford, 1898.

Brewster, Elizabeth,	*Palestine, Ohio,*	Chemistry
Brickell, Howard,	*San Francisco,*	Law
Bridgeman, Irene,	*San Diego,*	Physiology *Sp.*
Briggs, Caroline Elizabeth,	*Mountain View,*	Mathematics
Briggs, Nina Louise,	*Palo Alto,*	Drawing *Sp.*
Briggs, William Dinsmore,	*Sacramento,*	English
A. B., Stanford, 1896.		
Briscoe, John S. Withington,	*Chico,*	Economics
Bristol, Alice Josephine,	*Canton, Pa.,*	German
Brittan, Eleanor Ermil,	*Corning, Ia.,*	German *Sp.*
Bromfield, Beatrice Mary Ware,	*San Mateo,*	English
Broughton, Marion Percival,	*Marysville, Kans.,*	Physiology
Brown, Carl Grover,	*San Francisco,*	History
Brown, George Willard,	*Portland, Or.,*	Economics *Sp.*
Brown, Harriett Henrietta,	*Palo Alto,*	Mathematics
Brown, Lena Josephine,	*San Bernardino,*	English
Brown, Ora,	*Seattle, Wash.,*	History
Brown, Warren Bateman,	*San Luis Obispo,*	Physiology
Brown, Zaidee Mabel,	*Palo Alto,*	English
Brune, Ernest Louis,	*San Francisco,*	Law
Brunton, John,	*Watrous, N. M.,*	Entomology
Brunton, Mary Dulley,	*Sao Paulo, Brazil,*	French
Bryan, Richard,	*Anacostia, D. C.,*	Greek
Bryant, James Cullen,	*Mayfield,*	Mathematics
Buehner, Valentin,	*Los Angeles,*	German
Bullock, Newell Harris,	*Pleasant Grove, Utah,*	Education
Buntin, Emma,	*Terre Haute, Ind.,*	English
Burcham, Fleming Isaiah,	*Salem, Or.,*	History
A. B., Stanford, 1897.		
Burcham, John Samuel,	*Salem, Or.,*	Zoology *Sp.*
Burcham, James Taylor,	*Salem, Or.,*	History
A. B., Stanford, 1897.		
Burckhalter, Bonnie May,	*Truckee,*	English
Burmister, Howard Coles,	*Prescott, Ariz.,*	Geology
Burnett, William Wesley,	*San Jose,*	Law
Burrage, Herbert Farwell,	*Weston, Mass.,*	Botany
B. S., Cornell Univ., 1892.		
Burrel, Varina Jeannette,	*San Jose,*	Ethics
Busch, George Henry,	*Butte, Mont.,*	Law
Bush, Coleman Hall,	*Glenville, W. Va.,*	English
Bush, George William,	*Redding,*	Law
Buss, Hedwig Bertha,	*San Francisco,*	German

Butler, Joseph,	*Point Reyes,*	Physiology *Sp.*
Butler, Marie Antoinette,	*Palo Alto,*	English
Butterfield, Alice Olivia,	*Portland, Or.,*	Ethics
Byrne, Walter Edward,	*San Bernardino,*	History
Byxbee, Blanche Beatrice,	*Palo Alto,*	English
Byxbee, John Fletcher, Jr.,	*Palo Alto,*	Geology
Cadwallader, Bessum Rebecca,	*San Jose,*	Latin
Caldwell, Mary Lucile,	*San Francisco,*	English
Cameron, Harry Frank,	*Wakefield, Mass.,*	Civil Eng.
Camp, William Roswell,	*Palo Alto,*	Bionomics
Campbell, Mary Grafton,	*Palo Alto,*	Bionomics
Campbell, Maud,	*San Jose,*	Latin
Campbell, Robert Willis,	*San Francisco,*	Law
A. B., Stanford, 1896.		
Cannon, William Austin,	*Washington, Mich.,*	Botany
Cantwell, Charles Abraham,	*Tulare,*	Economics
Card, Ernest Mason,	*Tacoma, Wash.,*	History
Carle, Nathaniel Allen,	*Seattle, Wash.,*	Mechanical Eng.
Carne, Charles Henry,	*Nordhoff,*	Law
Carpenter, Edward Emery,	*San Luis Obispo,*	Civil Eng.
Carter, Edwin R.,	*Des Moines, Ia.,*	Mathematics
Castagnetto, George Allan,	*San Francisco,*	Physiology *Sp.*
Caswell, Georgia Alberta,	*Los Angeles,*	English
Catron, Charles Christopher,	*Santa Fe, N. M.,*	Latin
Chandler, Charles Strother,	*Baker City, Or.,*	Law
B. S., Oregon State Agr College, 1895.		
Chandler, Fred Brewster,	*Elmira,*	History
Chandler, Henry Porter,	*San Jose,*	Law
Chandler, Katherine A.,	*San Francisco,*	Education
Chandler, Leo St. Clair,	*San Francisco,*	History *Sp.*
Chapin, John Endicott,	*College Park,*	Chemistry
Chapman, Anna Margaret,	*Riverside,*	Mathematics
Chapman, Charles Carroll,	*Oakland,*	Geology *Sp.*
Chappel, Halbert William,	*Washington, D. C.,*	Law
Charles, Mabel Rankin,	*Palo Alto,*	Physiology
Charles, Samuel Watson,	*Palo Alto,*	Law
Chase, Dorothy Hinsdale,	*Oregon City, Or.,*	Drawing *Sp.*
Chase, Sade Hazleton,	*Oregon City, Or.,*	English *Sp.*
Chase, Thorington Clark,	*Santa Barbara,*	Chemistry
Chase, Warren Doty,	*Danielson, Conn.,*	Economics
Childs, Charles Wesley,	*San Jose,*	Sociology
Christensen, Minnie Augusta,	*Thermalito,*	English

Church, Lenoir Campbell,	*Boston, Mass.,*	Geology
Clark, Grace Eleanor,	*San Jose,*	Physiology
Clark, Matie Pearl,	*Socorro, N. M.,*	English *Sp.*
Clark, Walter,	*Eden Prairie, Minn.,*	Ethics
Cleaveland, Newton,	*Biggs,*	Physiology
Cleaver, Herbert Randall,	*Santa Ana,*	History
Coblentz, Mary Ethel,	*Los Angeles,*	History
Cochran, George Thomas,	*Alicel, Or.,*	Law *Sp.*
Coffin, Bessie Rachel,	*Boulder, Col.,*	German
Coffin, James Gilman,	*Boulder, Col.,*	Latin
Coldwell, Ethel Hunley,	*Modesto,*	Latin
	B. L., Mills College, 1894.	
Coldwell, Orin Barber,	*Portland, Or.,*	Electrical Eng. *Sp.*
Cole, Augusta Marie,	*Gilroy,*	English *Sp.*
Coleman, Cynthia Edna,	*Dixon,*	Latin
Collins, Burt Harrison,	*Bradford, Pa.,*	Geology
Collins, Ethel Claire,	*Santa Ana,*	History
Collins, Ray Merril,	*Bradford, Pa.,*	Geology
Cone, Elizabeth Hiett,	*Salinas,*	English
Conger, Ray Everett,	*Pasadena,*	Economics
Conlisk, Arthur Hopkins,	*Ogden, Utah,*	Electrical Eng.
Conneau, Myrtie,	*Modesto,*	History
Conneau, William Albert,	*Modesto,*	Law
	A. B., Stanford, 1898.	
Cook, Blanche Alberta,	*San Jose,*	History *Sp.*
Cooke, Sorrie Lillian,	*Santa Ana,*	Drawing *Sp.*
Coolidge, Daniel,	*Riverside,*	English
Corbin, Elisha Lockhart,	*Union, Or.,*	Law *Sp.*
Corbusier, Francis Addison,	*Angel Island,*	Mechanical Eng.
Corbusier, Philip Worthington,	*Angel Island,*	Chemistry
Cory, Sarah Ann,	*San Jose,*	Latin
Cotton, Steuart Walker,	*San Francisco,*	History
Coulter, Mabel Annie,	*Salinas,*	English
Coulter, Minnie,	*Santa Rosa,*	Education
Coverly, John Harvey,	*Whittier,*	Law
Cowdery, Alice May,	*San Francisco,*	English
Cowles, Rheinart P.,	*Palo Alto,*	Mechanical Eng.
Cox, Alvin Joseph,	*College Park,*	Chemistry *Sp.*
Cox, Jessie Benton,	*Watsonville,*	English
Craig, Edward Joseph,	*San Diego,*	Latin
Crandall, Wesley Clarence,	*Ogden, Utah,*	Physiology
Cranston, William McGregor,	*San Francisco,*	Law

Cressey, William Cram,	*San Jose*,	Physiology
Crocker, Harry Bosworth,	*Geyserville*,	Physiology
Cross, Charles Warren,	*East Oakland*,	Mechanical Eng.
Crow, Benjamin Stewart,	*San Jose*,	Law
Crow, Will Henry,	*Redwood City*,	Law
Crowell, Carlena,	*San Francisco*,	Romanic Lang.
Crummey, John David,	*Los Gatos*	History
Culver, George Bliss,	*Palo Alto*,	Zoology
	A. B., Stanford, 1897.	
Culver, Richard Keith,	*Palo Alto*,	Bionomics
Culver, Julia Louise,	*Palo Alto*,	English
	A. B., Stanford, 1896.	
Cummings, Frank J.,	*Petrolia*,	History *Sp.*
Cunningham, Francis Irenaeus,	*Orleans, Neb.*,	Chemistry
	A. B., Hastings College (Nebraska), 1888.	
Curry, David Alexander,	*Redwood City*,	Latin
	A. B., Indiana Univ., 1883.	
Curtis, Franke Duezze,	*Santa Clara*,	Chemistry
Curtner, Albert Howard,	*Alameda*,	Economics
Curtner, Josephine,	*Alameda*,	German *Sp.*
Cuthbertson, Sidney Miller,	*Manchester*,	Ethics
Cutten, Charles Pryde,	*Eureka*,	History
Cuzner, Guy Luke,	*Los Angeles*,	French
Daggett, John Stewart,	*Pasadena*,	Economics
Daly, John Samuel,	*Sacramento*,	Law *Sp.*
Daly, Kathryn Helen,	*San Francisco*,	History *Sp.*
Dannals, Marion Emma,	*San Diego*,	Mathematics
Davidson, Eva Frances,	*Beaver, Pa.*,	German
	B. S., Mt. Holyoke Coll., 1897.	
Davidson, Percy Erwin,	*San Diego*,	Education
Davidson, William Frederick,	*Beaver, Pa.*,	Mechanical Eng.
Davis, Arthur Eugene,	*San Francisco*,	Civil Eng.
Davis, Everly Mahin,	*San Pedro*,	Ethics
Davis, Maud Amanda,	*Des Moines, Ia.*,	German
Davis, Olive Percy,	*Sycamore*,	English
Davis, Rebecca Louise,	*Sycamore*,	History
Davis, Roy Veatch,	*San Jose*,	Physiology *Sp.*
Dawson, Edgar Blasdel,	*St. Helena*,	Physiology
Day, Homer Leland,	*San Francisco*,	Physiology
Day, William Clarence,	*Santa Barbara*,	Latin
Deach, Ivan,	*Peoria, Ill.*,	Greek
Deasy, Michael,	*Mendocino*,	Law

Decarli, Millio Charles,	*Waddington,*	Economics *Sp.*
Decker, Charles Gordon,	*Bakersfield,*	Law
Dellinger, Edna Leland,	*New Whatcom, Wash.,*	History
Denkinger, Fred Carl,	*Concord,*	Physiology *Sp.*
Dennett, Gertrude Isabel,	*San Jose,*	English
Derr, Anna Laurie,	*Washburn, Minn.,*	Romanic Lang.
Derr, Homer Monroe,	*Turbotville, Pa.,*	Mathematics
Detrick, Charles Reighley,	*San Francisco,*	Economics

A. B., Harvard Univ., 1891.

Deuel, Harry Austin,	*Denver, Col.,*	Mechanical Eng.
De Zaldo, Ceda,	*San Jose,*	Law *Sp.*
Dibble, Nellie Maria,	*Dakota City, Nebr.,*	History
Dickson, Blanche,	*Eureka,*	Hygiene *Sp.*
Dickson, Susie May,	*Truro, Nova Scotia,*	Zoology
Dickson, William Ernest,	*Eureka,*	Law
Diggles, Eliza Marietta,	*Palo Alto,*	Ethics
Diggles, Grace Pattison,	*Palo Alto,*	History
Diggles, Robert Newton,	*Palo Alto,*	Chemistry
Dinkelspiel, Grace,	*Steubenville, O.,*	English
Diviny, Thomas Matthew,	*Sacramento,*	Law
Dixon, Anna E.,	*Napa,*	History
Dixon, James Le Roy,	*Needham, Mass.,*	Classical Philol.
Doane, William Charles,	*Pasadena,*	Zoology
Dodd, Robert William,	*San Francisco,*	Chemistry
Dodson, Frank A.,	*Selma,*	Electrical Eng. *Sp.*
Dole, Alfred Rowell,	*Riverside,*	Geology
Dole, Charles Sumner,	*Riverside,*	Law
Dole, Emily Charlotte,	*Riverside,*	German
Dolph, Cyrus Abda,	*Portland, Or.,*	Electrical Eng.
Donaghho, John Shape,	*Parkersburg, W. Va.,*	Economics

A. B., Marietta Coll., 1889.

Doren, Alice Macartney,	*Dayton, Ohio,*	English
Doren, Elizabeth Bragdon,	*Dayton, Ohio,*	Economics
Dornberger, Edward L.,	*Mayfield,*	Physiology *Sp.*
Dorsey, Florence Eugenia,	*San Francisco,*	Entomology
Doughty, Frank,	*Napa,*	Mathematics
Doughty, Grace Eva,	*Napa,*	English

B. S., Napa College, 1895; A. B., Stanford, 1897.

Dowell, Annie Elizabeth,	*San Diego,*	History *Sp.*
Drake, Frederick Henry,	*Portland, Or.,*	Geology
Ducker, Edith Victoria,	*Mayfield,*	German
Ducker, Lena Mary,	*Mayfield,*	German

Dudley, Harry Chittenden,	*Guilford, Conn.*,	Latin
Dulley, Frederick Louis,	*Sao Paulo, Brazil*,	French
	A. B , Stanford, 1897.	
Dumars, Henry Dunn,	*Washington, D.C.*,	Mech. Eng. *Sp.*
Dunbar, Olive Mabel,	*San Luis Obispo*,	Latin
Dunbar, Florence,	*San Diego*,	English
Durfee, Abbie Birtch,	*Orland*,	History
Durfee, Clayton G.,	*Fredonia, N. Y.*,	Economics
Durfee, Ulysses Grant,	*Palo Alto*,	Bionomics
Durrell, Harold Woodman,	*Pasadena*,	Chemistry
Dutton, Harry A.,	*Elsinore*,	Botany
Dwight, Herbert Prentiss,	*San Francisco*,	Civil Eng.
Dyer, Florence Bauer,	*Palo Alto*,	French *Sp.*
Dyer, Laura Elizabeth,	*Boston, Mass.*,	History
Dyer, Susie Louise,	*Palo Alto*,	Physiology
Dyke, Charles John,	*Cleveland, O.*,	Bionomics
	A. B., Stanford, 1898.	
Earl, Clara Eloise,	*Napa*,	History
Eberhard, Emilie,	*Santa Clara*,	English
Edmonds, Glenn,	*Los Angeles*,	Law *Sp.*
Edwards, Ada,	*Indianapolis, Ind.*,	Hygiene *Sp.*
Edwards, Arthur Jordan,	*Minneapolis, Minn.*,	Physics
Edwards, Harry James,	*San Diego*,	Economics
Edwards, Haven Wilson,	*San Jose*,	History
Egan, Ignatius Joseph,	*San Francisco*,	Economics
Elias, Solomon Philip,	*Modesto*,	Law
Elliott, Malcolm,	*Honolulu, H. I.*,	Economics
Elmer, Warren Philo,	*Lodi, Ohio*,	History
Elmore, Jefferson,	*Palo Alto*,	Latin
	A. B. Stanford, 1895.	
Elmore, Margaret Hillard,	*Palo Alto*,	Physics
Emerson, Alice Lizzie,	*Palo Alto*,	Botany *Sp.*
Emerson, Florence,	*Palo Alto*,	Physiology
Emerson, George Irving,	*Centreville*,	Electrial Eng.
Emerson, Logan L.,	*Cynthiana, Ind.*,	Greek
	A. B., Union Christian Coll., 1893.	
Emery, Laura Johnson,	*Los Angeles*,	German
Emmett, Effie Serena,	*McCoy, Or.*,	Drawing *Sp.*
Emmett, Elmer White,	*McCoy, Or.*,	Education
English, John Francis, Jr.,	*San Francisco*,	History
English, Mary Lavinia,	*Decatur, Ill.*,	Latin
Erb, William Maurice,	*Chemainus, B. C.*,	Economics *Sp.*

Evans, Caroline Hornbrook,	*Evansville, Ind.,*	English
Evans, Genevieve V.,	*San Jose,*	Latin
Evans, George Herbert,	*Cheyenne, Wyo.,*	Law *Sp.*
Everett, Laura Bell,	*Sutter,*	English
Faber, Henry Clay,	*Palo Alto,*	Education
Faris, Clifton Maupin,	*Sacramento,*	Chemistry
Farmer, Edward Lewis,	*Vallejo,*	Law
Fay, Alexandra,	*Anaheim,*	Education
A. B., Stanford, 1898.		
Felton, Katharine Conway,	*Oakland,*	Law
B. L., Univ. of California, 1895.		
Ferguson, Agnes Eva,	*Stockton,*	Latin
Ferguson, Grace Hamilton,	*Palo Alto,*	French
Ferguson, James,	*Olympia, Wash.,*	Ethics
Ferrari, Louis,	*San Francisco,*	Law
Ferrel, May Geraldine,	*San Francisco,*	English *Sp.*
Fickert, Charles Marron,	*Bakersfield,*	History
Field, Robert Estee,	*St. Louis, Mo.,*	Mechanical Eng. *Sp.*
Filcher, Ralph Emerson,	*San Francisco,*	Economics
Fisher, Forrest Starkey,	*The Dalles, Or.,*	Law
Fisher, Howard Frederick,	*Calistoga,*	Chemistry *Sp.*
Fisher, Walter Kenrick,	*Washington, D. C.,*	Zoology
Fleming, Harry Livingstone,	*Bloomington, Ill.,*	Economics
Flinn, Anna Wyman,	*Albany, Or.,*	English
B. S., Albany College, 1892.		
Flinn, Orpha Josephine,	*Albany, Or.,*	English
B. S., Albany College, 1894.		
Flint, E. Royal,	*Palo Alto,*	History
Flint, Maude,	*Palo Alto,*	Greek,
A. B., Stanford, 1897.		
Fogg, Frank,	*Tacoma, Wash.,*	English
Ford, Cornelia Pierson,	*Palo Alto,*	German
Ford, Georgiana Bishop,	*Palo Alto,*	English
A. B., Stanford, 1895.		
Forsyth, George Thomas,	*Salinas,*	Mechanical Eng. *Sp.*
Foster, Frank H.,	*Los Gatos,*	Law
Fowler, Una Eugenia,	*Los Angeles,*	English
Fox, Francis St. Joseph,	*Red Lodge, Mont.,*	Economics
France, Lucy Mabel,	*Oakland,*	Latin
Francis, George Horton,	*Napa,*	History
Franklin, Arthur Chester,	*San Francisco,*	Economics
Fraser, Anna Graeme,	*San Jose,*	History

Fraser, Effie,	*Crowley, La.*,	Latin
B. L., Waynesburg, Coll., 1892.		
Free, Arthur Monroe,	*Mayfield*,	Law
French, Clara Graves,	*Monmouth, Or.*,	English
Friedman, Henry A.,	*San Francisco*,	Economics
Frost, Everard Charles,	*Maryville, Mo.*,	Chemistry
Fry, H. Ray,	*San Jose*,	Law
Fry, Winifred Sophie,	*Arcata*,	Physiology
Fuller, Mabel Blake,	*Worcester, Mass.*	German
Fuller, Marion,	*San Mateo*,	English
Gaches, Samuel Francis,	*La Conner, Wash.*,	History
Gaddis, Fletcher Eugene Allen,	*Santa Rosa*,	Ethics
Gaddis, Isabella Donnan,	*Silver City, N. M.*,	English
Gaden, Mina Victoria,	*Palo Alto*,	Sociology *Sp.*
Gamer, Albert Cylvester,	*San Jose*,	Chemistry *Sp.*
*Garfield, Raymond Sheldon,	*Napa*,	Geology
George, Carolyn,	*College Park*,	Zoology
George, Mary Wilson,	*College Park*,	Psychology
Gerichs, E. Louise,	*San Jose*,	German
Gerrans, Amy,	*Exeter, England*,	English *Sp.*
Gherini, Ambrose,	*San Francisco*,	Economics
Gibson, Gion Wakefield,	*Williams*,	Civil Eng.
A. B., Stanford, 1896.		
Giddings, Charles Nelson,	*Ogden, Utah*,	Chemistry
Gifford, Perl Vincent,	*Erie, Pa.*,	History
Gillespie, Claude Bailey,	*San Jose*,	Law
Gillette, Benjamin Taswell,	*Los Angeles*,	Chemistry
Gillis, Sarah Cecelia,	*Mt. Pleasant, Ia.*,	German
Gilman, Charles Edward,	*Palo Alto*,	English
Gilman, Grace Clyde,	*San Diego*,	German,
Gilman, Philip Kingsnorth,	*Palo Alto*,	Physiology
Gilman, Ralph Edson,	*San Diego*,	Electrical Eng.
Givens, John Alfred,	*Blackfoot, Idaho*,	Physiology *Sp.*
Glass, Mattie Jane,	*Paso Robles*,	Chemistry *Sp.*
Goldstein, Alfred E.,	*San Francisco*,	History
Goodhue, Carrie Amanda,	*Oakland*,	German *Sp.*
Grant, Edna May,	*Sacramento*,	History
Gray, Charles Alfred,	*San Jose*,	Law
Gray, Thomas S.,	*Palo Alto*,	Economics
Greeley, Arthur White,	*San Jose*,	Zoology
Greeley, William Buckhout,	*San Jose*,	Greek

*Died March 9, 1898.

Green, Charles A.,	*Sioux City, Ia.,*	Economics
Green, George Matthew,	*Placerville,*	Education
A. B., Stanford, 1897.		
Green, Lillian Pearl,	*Knightstown, Ind.,*	English
Greenebaum, Fred Henry,	*San Francisco,*	Law
Greenleaf, Charles Hunt,	*Chicago, Ill.,*	Romanic Lang.
Gregory, Linden Irwell,	*Palo Alto,*	Economics
Gregory, Maud Bertina,	*Palo Alto,*	Drawing
Gregory, Thomas T. C.,	*Suisun,*	History
Grieb, Maud Louisa,	*Arroyo Grande,*	History
A. B., Stanford, 1897.		
Grigsby, John Livingston,	*Coatsburg, Ill.,*	Law *Sp.*
Grow, Edward Eugene,	*Elsinore,*	Electrical Eng.
Grunsky, Herman Washington,	*Stockton,*	Economics
Guidery, Roy E.,	*Oroville,*	Economics
Gunn, Francis George,	*Kelseyville,*	Physiology *Sp.*
Gunn, James Alexander,	*Kelseyville,*	Zoology
A. B., Stanford, 1895.		
Gussefeld, Clara,	*San Jose,*	German *Sp.*
Gwartney, John George,	*Mayfield,*	Mathematics
Haas, Charles Edmund,	*Los Angeles,*	German
Hadden, Mary Anne,	*Oakland,*	Mathematics
Hadley, Roy Overman,	*New Whatcom, Wash.,*	English
Haffey, James Lee Roy,	*Denver, Colo.,*	Law
Haffey, Willard Combs,	*Denver, Colo.,*	Ethics *Sp.*
Hahn, Otto Henry,	*San Francisco,*	Law
Hale, Martha,	*San Diego,*	Mathematics
Hale, Robert Taylor,	*Pasadena,*	Mathematics
Hall, Albert Ludwig,	*Pasadena,*	Greek
Hall, Benjamin Fred,	*Palo Alto,*	English
Ph. B., Univ. of Pacific, 1884.		
Hall, Effa,	*Dixon,*	English
Hall, Ferdinand Lloyd,	*Newcastle,*	Economics
Hall, Laura,	*San Diego,*	History
Hambly, Winifred,	*Bridgewater, Mass.,*	Latin
Hamilton, Addie Louise,	*Hollister,*	English
Hamilton, Carrie L.,	*Hollister,*	English
Hamilton, Frank Dana,	*Santa Clara,*	Education *Sp.*
Hamilton, Joseph Reuben,	*Kings City,*	English
Hamilton, Parnie Olive,	*Westley,*	German
Hammond, Edith Sybil,	*San Francisco,*	Physiology
Hardin, Lily May,	*Hollister,*	English

Harkins, Charles Lorin,	*Menlo Park,*	Electrical Eng.
Harkins, Mary Santa Barbara,	*Menlo Park,*	History
Harkins, William Draper,	*Escondido,*	Chemistry *Sp.*
Harlan, Orren Arthur,	*College Park,*	Geology *Sp.*
Harris, May,	*San Francisco,*	History
Harris, Richard Stanley,	*Los Angeles,*	Physiology *Sp.*
Harris, Rosalie,	*San Francisco,*	English
Harrison, Lewis Gooding,	*Pasadena,*	Chemistry
Hart, Ida,	*Oakdale,*	Latin
Hartwell, Robert William,	*Kirkwood, Ill.,*	Law *Sp.*
Harvey, Frederick Estabrook,	*Palo Alto,*	Geology *Sp.*
Harwood, Henry Gordon,	*Louisville, Ky.,*	Psychology
A. B., Stanford, 1896; A. M., 1897.		
Haskell, Jessie Judson,	*Bradford, Pa.,*	History
Haskell, Katherine Lois,	*Bradford, Pa.,*	Chemistry
A. B., Stanford, 1898.		
Haslacher, Alfred,	*Oakdale,*	Economics
Hatch, Paul Carl,	*Oregon, Ill.,*	Civil Eng.
Hathorne, Eleanor Hollingsworth,	*Barre, Mass.,*	History
Havens, Harold,	*Oakland,*	Geology
Hawley, Clarence Edgar,	*Saticoy,*	Education
Hawley, Harriett Hand,	*Palo Alto,*	Ethics
Hayden, Carl Trumbul,	*Tempe, Ariz.,*	Economics *Sp.*
Hays, Malcolm McCullough,	*Los Angeles,*	Law
Hays, Willis Barnum,	*Pasadena,*	Chemistry
Healey, John Edward,	*Ventura,*	History
Hearne, Eleanor Virginia,	*San Diego,*	English
Heaton, Alice Carey,	*Knightstown, Ind.,*	English *Sp.*
Hedger, Henry Harrison,	*San Francisco,*	History
Heine, Lillian,	*Palo Alto,*	English *Sp.*
Heine, William Monroe,	*Palo Alto,*	Physics
Heinemann, Ada Julia,	*Los Angeles,*	Economics
Heintz, Annie T.,	*Palo Alto,*	English *Sp.*
Heller, Edmund,	*Riverside,*	Zoology
Henderson, Robert Angus,	*Stockton,*	Law
Henion, Harry Sears,	*Warm Springs,*	Economics
Henne, Chris,	*Los Angeles,*	Mechanical Eng.
A. B., Stanford, 1897.		
Henry, Bessie Edson,	*College Park,*	English
Henry, Lou,	*Monterey,*	Geology
Henry, William Fiske,	*Dixon,*	English
Herrold, Charles David,	*San Jose,*	Physics

Herrold, Roy Scott,	*San Jose,*	Physiology
Hertzinger, Leo Agnes,	*Ouray, Colo.,*	English
Hickock, Olney Otis,	*Colusa,*	Law
Hicks, Alden Rhodes,	*Scottville, Ill.,*	Law
Hicks, James Ewing,	*Sacramento,*	Electrical Eng. *Sp.*
Hicks, Martha Elizabeth,	*Sacramento,*	Latin
Higley, Brodie Gilman,	*Hartford, N. Y.,*	History
Hill, Edith Louise,	*Pasadena,*	Latin
	A. B., Stanford, 1898.	
Hill, Harold Phillips,	*Redlands,*	Physiology
Hill, Harrison Wesley,	*Redlands,*	German
Hill, Howard Gilman,	*Redlands,*	Physiology
Hindry, Nettie Eliza,	*Denver, Colo.,*	Latin
	A. B., Stanford, 1897.	
Hinman, Frank,	*Portland, Or.,*	Physiology
Hinsdale, Lester Jesse,	*San Francisco,*	Law
	A. B., Stanford, 1895.	
Hirschfelder, Arthur Douglas,	*San Francisco,*	Physiology
	B. S., Univ. of California, 1897.	
Hobbs, Horace Potts,	*San Francisco,*	Civil Eng.
Hobson, Edna Mary,	*Eastland,*	English
Hodges, Lu Amy,	*Arroyo Grande,*	French
Hodgson, Eunice Hazel,	*San Francisco,*	Ethics
Hogevoll, Swan Taraldson,	*Palo Alto,*	Law
Hogue, Clara Elizabeth,	*Santa Paula,*	Physiology
Hogue, Nellie May,	*Albany, Or.,*	English
Holden, Frances Cooke,	*Santa Ana,*	Education *Sp.*
Holley, Carl Hiram,	*Palo Alto,*	Electrical Eng.
	A. B., Stanford, 1898.	
Holley, Harry Hall,	*Palo Alto,*	Physics
Holly, Ernest Deforest,	*Dixon,*	Economics
Holly, Theodora H.,	*Palo Alto,*	Drawing *Sp.*
Holmes, Helen Lathrop,	*Tacoma, Wash.,*	English
Holmes, John Elmer,	*Tacoma, Wash.,*	Geology
Hoon, Eleanor Gertrude,	*Dixon, Ill.,*	Hygiene *Sp.*
Hoon, William Howard,	*Dixon, Ill.,*	Law *Sp.*
Hooper, Kate Alaska,	*San Bernardino,*	English
Hoover, Bessie Belle,	*Gilroy,*	English *Sp.*
Hoover, Grace Amelia,	*Gilroy,*	English *Sp.*
Hoover, Oliver Stanton,	*Cedron, O.,*	Mathematics
Hoover, Theodore,	*Palo Alto,*	Geology
Hopper, Bernal Mirza,	*Del Rey,*	Mathematics

Hopper, Florence,	*Los Angeles,*	German
Horst, Carl Herman,	*Butte, Mont.,*	Physiology
Horstmeyer, Lulu Catherine,	*Napa,*	History
Howard, Fred Cisco,	*Baldwinsville, N. Y.,*	History
Howell, Bernard Peter,	*Salt Lake City, Utah,*	Geology
Howell, John Samuel,	*Hopeland,*	Mechanical Eng. *Sp.*
Hudson, William George, Jr.,	*Watsonville,*	Law
Hull, Warren,	*Palo Alto,*	Law
Hunt, Agnes Cora,	*Sandown, N. H.,*	Ethics *Sp.*
Hunt, Albert Perry,	*Warrensburg, Mo ,*	Economics
Hurt, Arthur Raymond,	*Santa Fe, N. M.,*	Latin
Huston, Harry Lee,	*Armour, S. Dak ,*	Geology
Hyde, Harriett Sophia,	*San Francisco,*	Mathematics
Hyde, James Macdonald,	*Palo Alto,*	Zoology
Hyde, Lillian Seraphine,	*Palo Alto,*	Bionomics
Ibs, Matilda,	*San Diego,*	Psychology
Inouye, Junzuboro,	*Nakamura, Japan,*	Mathematics
Irwin, Wallace Admah,	*Denver, Colo.,*	Latin
Irwin, William Henry,	*Denver, Colo.,*	English
Jackson, Byron Nicholson,	*Wilkesbarre, Pa.,*	Electrical Eng.
Jackson, Rhees,	*Portland, Or.,*	Geology
Jahant, Walter V.,	*Woodbridge,*	Civil Eng.
James, Edwin,	*Paso Robles,*	Civil Eng.
James, Harlean,	*Denver, Colo.,*	History
Jarnick, Joseph,	*Almond, Wis.,*	Latin
Jeffs, Alexander Samuel,	*Kent, Wash.,*	Law
Jevne, Burdette,	*Los Angeles,*	Economics *Sp.*
Jewell, Lillian Dixon,	*Palo Alto,*	Hygiene *Sp.*
Johnson, Francis Eunice,	*San Marcial, Mexico,*	History *Sp.*
Johnson, Grace A.,	*Etna Mills,*	English
Johnson, Mattie,	*Los Angeles,*	Entomology
Ph. B., Hamline Univ., 1892.		
Johnson, William Oscar,	*Robinson, Kansas,*	Law
Johnson, Winifred,	*Marietta, Ohio.,*	Zoology
B, L., Waynesburg Coll., 1890.		
Johnston, Fannie Ella,	*College Park,*	Education
B. S., Cornell Coll. (Ia.), 1884; M. S., 1887.		
Johnston, Howard Charles,	*Rushsylvania, O.,*	Mech. Eng. *Sp.*
Johnston, William Wood,	*Detroit City, Minn.,*	Mech. Eng.
Jones, Beatrice,	*Alexandria, Ind.,*	Ethics *Sp.*
Jones, Caroline Dana,	*Oakland,*	Latin *Sp.*
Jones, Charles Wickham,	*Congress, Ariz.,*	Law
B. L., Univ. of Wisconsin, 1895.		

Jones, Ewing Llewellyn,	*Los Angeles,*	Physiology *Sp.*
Jordon, William Francis,	*N. Ontario,*	Electrical Eng.
Joslin, Arba Vanderburg,	*Antioch,*	Electrical Eng.
Joss, Horace Wilder,	*Red Wing, Minn.,*	Economics
Jost, Fred,	*San Francisco,*	Geology
A. B., Stanford, 1897.		
Joyce, Fred Lawerance,	*San Francisco,*	Physiology
Kaiser, Ida E.,	*Mayfield,*	German *Sp.*
Kalenborn, Arion Siegfried,	*Tacoma, Wash.,*	Electrical Eng.
Kalloch, Belle,	*San Francisco,*	English
Karr, Ada Welch,	*San Jose,*	Mathematics
Karsted, Alfred,	*Butte, Mont.,*	Physiology
Kay, Annie Ella,	*Monterey,*	Ethics *Sp.*
Keesling, Francis Valentine,	*San Jose,*	Law
Kellogg, Emma,	*Palo Alto,*	English *Sp.*
Kellogg, Estelle Lucinda,	*Palo Alto,*	Latin
Kellogg, Wilfred Harvey,	*Palo Alto,*	Physiology *Sp.*
Kelly, Alice May,	*Palo Alto,*	Physiology *Sp.*
Kelly, Virginia Mabel,	*Palo Alto,*	Physiology
Kemp, William Webb,	*Placerville,*	History
Kenyon, Walter James,	*San Francisco,*	Bionomics
Kibbey, Adelaide Sipes,	*Minneapolis, Minn.,*	Education
Kidder, Marie Margaret,	*Pasadena,*	History
King, Clarence Van Houdon,	*Everett, Wash.,*	Law
King, Lillian Owyang,	*San Francisco,*	Physiology *Sp.*
King, Mabel L.,	*San Luis Obispo,*	Drawing *Sp.*
Kingsbury, William Fay.	*Pinkstaff, Ill.,*	Economics
Kinsman, Chester Cushing,	*San Francisco,*	Mechanical Eng. *Sp.*
Kirkpatrick, Grace Fleming	*San Jose,*	Education
Klauber, Hugo,	*San Diego,*	Civil Eng.
Knecht, Emil Charles,	*Los Angeles,*	Geology
Knepper, Edmund Elnathan,	*Lewiston, Idaho,*	Greek
A. B., Heidleberg Univ. (O.), 1891; A. M., 1897.		
Knoche, Edward Louis Herman,	*San Jose,*	Botany
Kohn, Samuel Milton,	*Ogden, Utah,*	History
Kooser, Emma Lena,	*San Jose,*	Ethics *Sp.*
† Kroeck, Louis Samuel,	*Los Angeles,*	Physiology
B. S., Univ. of Pacific, 1895; A. M., Stanford, 1897.		
Kummer, Clara May,	*San Jose,*	Latin
Kuns, Margaret Effa,	*McPherson, Kans.,*	Hygiene *Sp.*
Kuwana, Inakichi,	*Palo Alto,*	Entomology *Sp.*
Lake, Viola May,	*Santa Cruz,*	Education

Lamb, Frank Haines,	*Walnford, N. J.*,	Botany
Lanagan, James Francis,	*Denver, Colo.*,	Latin
Langnecker, Harry Leslie	*New Brighton, Pa.*,	History
Lathrop, Helen,	*St. Helena*,	English *Sp.*
Lathrop, Laura Myrtle,	*Hollister*,	Romanic Lang. *Sp.*
Lathrop, Winnona,	*Hollister*,	History
Lauck, Clara Louise,	*Santa Clara*,	German
Lawrence, George Richardson,	*Monrovia*,	Geology
Lawshe, Walter Delany,	*Tacoma, Wash.*,	Geology
Lea, Homer,	*Los Angeles*,	Economics
Leavitt, Granville E.,	*Yerington, Nev.*,	Physiology
Lehners, Carl Herman,	*San Francisco*,	Physiology
Leiter, Otho Clarke,	*Portland, Or.*,	History
Leiter, Rufus Albertus,	*Portland, Or.*,	Law
Leland, Harry Russell,	*Toledo, Ohio*,	Geology *Sp.*
Leland, Phineas W.,	*Palo Alto*,	Law *Sp.*
Lemmon, Allan Bosley, Jr.,	*Santa Rosa*,	Geology
Lemon, Mary Effie,	*Redding*,	English *Sp.*
Lesley, Elizabeth,	*Santa Ana*,	Mathematics
Leventritt, Mortimer Clifford,	*San Francisco*,	History
Lewis, Elizabeth Babette,	*San Diego*,	German
Lewis, John Howard,	*Portland, Or.*,	Civil Eng.
Lewis, Thomas Archibald,	*Palo Alto*,	Latin
A. B., Hampden Sidney Coll., 1893; A. M., 1894.		
Lewis, Winford Lee,	*Gridley*,	Economics
Libby, William Sumner,	*Pomona*,	Psychology
A. B., Stanford, 1896.		
Lillard, Jeremiah Beverly,	*Santa Barbara*,	Physiology
Lindsay, David William,	*Palo Alto*,	Education
Lockey, Mary Ishbel,	*Helena, Mont.*,	German
Lockey, Richard, Jr.,	*Helena, Mont.*,	History
Loeser, Katharine Foster,	*El Paso, Texas*,	Chemistry *Sp.*
Loeser, Robert M.,	*El Paso, Texas*,	Chemistry *Sp.*
Longley, John Artemas,	*Mountain View*,	Romanic Lang.
A. B., Stanford, 1896; A. B., Harvard, 1896.		
Longley, Mary Emily,	*Mountain View*,	Mathematics
A. B., Stanford, 1895.		
Loofbourow, Leon L.,	*Salt Lake City, Utah*,	History
Lougheed, Herbert Edgar,	*Los Angeles*,	English *Sp.*
Lousley, Vincent Daniel,	*Santa Barbara*,	Electrical Eng.
Lucas, Harry Clifford,	*Santa Cruz*,	Economics
Lucy, Addie May,	*Vallejo*,	English

Lull, George, Jr.,	*Cambria,*	Law
Lurch, Jacob B.,	*Cottage Grove, Or.,*	Physiology
Lyman, Edmund Rensselaer,	*Palo Alto,*	Chemistry
	A. B., Stanford, 1896.	
Lynn, Ellen Utley,	*Cambria,*	English
Lyon, Addi Warren,	*Artesia,*	Electrical Eng.
Lyon, Dorsey Alfred,	*Las Vegas, N. M.,*	Chemistry
Mabrey, Eli Nelson,	*Palo Alto,*	Law
McClintock, Saxe Milton,	*Burton, Wash,*	Physics *Sp.*
McCormack, Edgar W.,	*Portland, Or.,*	Civil Eng.
	A. B., Stanford, 1898.	
McCraken, Robert Guy,	*Portland, Or.,*	Electrical Eng.
McCroskey, Benjamin Barratt,	*Hollister,*	Economics
McCurdy, Karl,	*Rucker,*	History
McDowell, John Ezra,	*Ashland, Ohio,*	Economics
McDowell, Percy,	*Ashland, Ohio,*	English
McFadden, Elizabeth,	*Santa Ana,*	Physiology
McFadden, Thomas Lewis,	*Placentia,*	History
MacFarland, Wendell Stuart,	*Ontario,*	Greek
McGee, Van Norman,	*Denver, Colo.,*	Civil Eng.
Macgillivray, Helen Mary,	*Palo Alto,*	Hygiene
McGinty, Arthur Thomas,	*Wilkesbarre, Pa.,*	Electrical Eng. *Sp.*
McGowan, Edward Allen,	*San Mateo,*	Economics
McGregor, Richard Crittenden,	*Denver, Colo.,*	Ethics
McInnis, William Carr,	*San Francisco,*	Law
McIntosh, James,	*Palo Alto,*	Physics
McIntosh, Walter Marlette,	*Los Angeles,*	Law
McIntosh, William Peter,	*Los Angeles,*	Law
McIntyre, Eugene Blake,	*Menlo Park,*	Physiology
Mackay, Thomas Henry,	*Vancouver, B. C.,*	Ethics
McKee, Georgia,	*San Jose,*	Romanic Lang.
Mackinnon, Duncan,	*Oakland,*	Education
Mackintosh, Gertrude,	*Seattle, Wash.,*	English
	A. B., Stanford, 1898.	
McLain, Robert B.,	*Wheeling, W. Va.,*	Zoology
McLaughlin, Roy Parmelee,	*Sebastopol,*	Geology
Maclean, Donald Gray,	*San Francisco,*	German
McLean, Mary Matilda,	*Oakland,*	Latin
	A. B., Univ. of California, 1895.	
MacLennan, Charles Howard,	*Palo Alto,*	Mathematics *Sp.*
McLennan, Hattie,	*Palo Alto,*	Mathematics *Sp.*
McLennan, John Daniel,	*Palo Alto,*	Mathematics

McLeod, Mary M.,	*San Francisco,*	Education
McMillan, Helen,	*San Diego,*	English *Sp.*
McMurtry, Belle Stuart,	*Los Gatos,*	History
McNaughton, Amina Wilson,	*Tempe, Ariz.,*	Mathematics
McNeil, Wilber Charles,	*Sioux City, Ia.,*	Economics
McRae, Donald Murdock,	*Oakland,*	Physiology *Sp.*
McReavy, Edwin Clare,	*Union, Wash.,*	Law *Sp.*
Macy, Lloyd Richardson,	*Pasadena,*	Geology
Madden, Martha Elizabeth,	*Milton, Pa.,*	Economics
Maddock, George Frederick,	*Mayfield,*	Elec. Eng. *Sp.*
Maddock, Mary Marchant,	*Mayfield,*	Ethics *Sp.*
Maddren, Alfred Geddes,	*Washington, D. C.,*	Zoology *Sp.*
Madison, Charles Rollin,	*Fruitvale,*	Drawing
	A. B., Indiana Univ., 1890.	
Madsen, Robert Hansen,	*Palo Alto,*	Physiology
Madson, Theodore,	*Fresno,*	English *Sp.*
Magee, Allyn Claude,	*San Diego,*	Mathematics
Mailer, Jessie Willis,	*Santa Rosa,*	Physiology
Main, Marylyn,	*Santa Barbara,*	Physiology
Maitland, Louise,	*Palo Alto,*	Education
Maize, Sidney Derby,	*San Diego,*	Civil Eng. *Sp.*
Mallery, John Harry,	*Palo Alto,*	Physiology
Manley, Edwin Alexandra,	*Tacoma, Wash.,*	Physiology
Mannon, Charles McFerson,	*Ukiah,*	History
Maples, Edward Thompson,	*Bakersfield,*	Economics
March, Maud,	*Washington, D. C.,*	Hygiene *Sp.*
Mariner, Mabel Jane,	*Lincoln,*	Hygiene *Sp.*
Markham, Marie,	*Pasadena,*	French
Marrack, Cecil Mortimer,	*San Mateo,*	English
Marsh, Gertrude May,	*Santa Cruz,*	Latin
Martin, Clara Louise,	*Reno, Nev.,*	Physiology
Martin, Gertrude Alice,	*Reno, Nev.,*	French
Marvin, Frank James,	*Spokane, Wash.,*	Law
Marx, Harriet Grotecloss,	*Palo Alto,*	Drawing
	B. S., Cornell Univ., 1884.	
Marx, Joseph,	*Pasadena,*	Chemical Eng.
Mathews, Julia,	*Los Angeles,*	English *Sp.*
Matthews, Frank Cameron,	*Palo Alto,*	Physiology
	A. B., Stanford, 1897.	
Matthews, Helen Lucy,	*Salem, Or.,*	History
Maxwell, William Clarence,	*Woodland,*	Physiology
Mayeda, Frank Kinichiro,	*Tokio, Japan,*	Zoology

Maytham, Frank,	*Buffalo, N. Y.,*	Economics
Meiklejohn, David Forbis,	*Butte, Mont ,*	Chemistry
Meredith, Mary California,	*San Luis Obispo,*	Latin
Merriam, Henry McP.,	*Vancouver Barracks, Wash.,*	Geology, *Sp.*
Merrill, Albert Marion,	*Richmond, Utah,*	Psychology
Merritt, Mary Elizabeth,	*Woodland.*	French
Merritt, Rowena,	*Woodand,*	English
Metteer, Charles Franklin,	*Pacific Grove,*	Law
Meyer, Catherine Bertha,	*Palo Alto,*	German
Meyer, Emma Elizabeth,	*Coronado,*	German
Meyer, Raymond Daniel,	*Carbon, Wyo.,*	Civil Eng.
Meyrick, Mary Lily,	*Palo Alto,*	English
Miles, Harriette,	*Elgin, Kans.,*	Botany *Sp.*
Miller, Elizabeth,	*San Jose,*	Romanic Lang. *Sp.*
Miller, Elmer Isaiah,	*Palo Alto,*	History
A. B., Stanford, 1896; A. M., 1897.		
Miller, Etta Laura,	*Napa,*	English
A. B., Smith College, 1892; A. M., 1897.		
Miller, Guy Chester,	*Salem, Or.,*	English
Miller, Nelson Dorrington,	*Steubenville, Ohio,*	Economics
Miller, Pearl Anna,	*Lawrenceburg, Ind.,*	Zoology *Sp.*
Miller, Stephen Ivan, Jr.,	*Palo Alto,*	Economics
Mills, Helen Hall,	*Menlo Park,*	Entomology *Sp.*
Mills, Louis David,	*Menlo Park,*	Geology
Miyake, Hanzabuo,	*Okayama, Japan,*	Chemistry
Moeller, Albert Lucien,	*San Francisco,*	Chemistry
Monteith, Andrew,	*San Francisco,*	Ethics *Sp.*
Montgomery, Dewitt,	*Placentia,*	English
Moore, Jessie Archibald,	*Los Angeles,*	Chemistry
Mordecai, Alfred,	*Springfield, Mass.,*	Civil Eng. *Sp.*
Mordecai, George Washington, Jr,,	*Madera,*	Economics
Morgan, Andrew Bertram,	*Palo Alto,*	Law
Morgan, Anna,	*College Park,*	Mathematics
Morgan, Edward Ellsworth,	*Portland, Or.,*	Law
Morgan, Winifred June,	*Oakland,*	Zoology
Moriarty, Willis Harrison,	*Emlenton, Pa.,*	History
Morley, Ada Loraine	*Datil, N. M.,*	Zoology *Sp.*
Morley, Agnes,	*Datil, N. M.,*	Economics
Morris, George Carleton,	*Salem, Or.,*	Law *Sp.*
Morris, William Alfred,	*Salem, Or.,*	History
Morrison, Sara Graham,	*Sharon, Pa.,*	History *Sp.*
Morse, Ada B.,	*Santa Clara,*	English *Sp.*

Morse, Newell Obadiah,	*Santa Clara,*	Law
Morton, Harriet Mason,	*Palo Alto,*	Entomology
Mosher, Clelia Duel,	*Palo Alto,*	Physiology
	A. B., Stanford, 1893; A. M., 1894.	
Mosher, Katherine Anthy,	*Long Beach,*	Latin
Moulton, Dudley,	*Campbell,*	Greek
Moulton, Josephine,	*Campbell,*	English
Moulton, Mary Esther,	*Campbell,*	Botany
Mount, Helen Viola,	*Palo Alto,*	French
Muir, Lewis Clark,	*Liberty, Mo.,*	Law
Muller, Leo Gerard du Cellin,	*Nymegen, Holland,*	Math. *Sp.*
Mullins, Joanna Muriel,	*Mayfield,*	History
Munn, Margaret Louise,	*San Jose,*	History
Murgotten, Francis Clark,	*San Jose,*	Latin
Murphy, Chester Griffin,	*Salem, Or.,*	Law
Murphy, James Edmund,	*San Francisco,*	Law
Nakamura, Hatsuwo,	*Tokio, Japan,*	Chemistry
	A. B., Stanford, 1898.	
Narregan, Lynden Carl,	*Eugene, Or.,*	Law
Nash, Elizabeth Whitney,	*Hollister,*	English
Nelson, Andrew Edward,	*Paso Robles,*	German
Newman, Oliver,	*Dixon,*	History
Nichols, Bernard Charles,	*Grand Rapids, Mich.,*	Economics
Nichols, Walter Edmund,	*Hoboken, N. J.,*	Economics
Nicolas, Virginia Noelie,	*Fullerton,*	French
Nims, Grace,	*Pacific Grove,*	Physics
Nims, Joy,	*Pacific Grove,*	Chemistry
Noble, Frederic Scott,	*Dunsmuir,*	Civil Eng.
Noble, Irvine Morrison,	*San Rafael,*	Chemical Eng.
North, Edmund David,	*Los Angeles,*	Civil Eng.
Norton, Katherine Robinson,	*Alameda,*	English
Nourse, John Thomas, Jr.,	*Santa Ana,*	Law
Nutter, Edward Hoit,	*Mountain View,*	Elec. Eng., *Sp.*
Nutting, Perley Gilman,	*Palo Alto,*	Physics
	A. B., Stanford, 1897.	
Ogier, Adelaide Reid,	*San Jose,*	History
Ohara, Henlly Shoichi,	*Chitbaken, Japan,*	Economics
O'Hara, Thomas J.,	*Los Angeles,*	Law *Sp.*
Olcovich, Viola,	*San Francisco,*	Physiology
Olshausen, Bruno Adolph,	*Los Angeles,*	Chemistry *Sp.*
Ortschild, John Francis,	*Portland, Or.,*	Physiology
Osborn, John Burchard,	*San Diego,*	Latin

Oskison, John Milton,	*Vinita, Ind. Ter.*,	Law
Outcalt, Irving Erastus,	*San Diego*,	English
	A. B., Stanford, 1896; A. M., 1897.	
Overacker, Michael Justus,	*Centerville*,	Ethics
Page, Benjamin Edwin,	*Pasadena*,	English
Page, Clarence W.,	*Oakland*,	Physiology
Page, Ernest Stoddard,	*Oakland*,	Law
Paine, Winifred Mabel,	*Redlands*,	Botany
Palmer, John Williams,	*Elsinore*,	Classical Philology
Palstine, Oliver Price,	*Lower Lake*,	History *Sp.*
Park, Florence,	*San Jose*,	English *Sp.*
Parker, Caroline Teresa,	*Napa*,	History
Parker, Garth,	*Salinas*,	Physiology
Parker, Ralph Eugene,	*Salem, Or.*,	Civil Eng. *Sp.*
Parkin, William Metcalf,	*Pittsburg, Penn.*,	Geology
Parsons, Edith Ferris,	*San Jose*,	English
Partridge, Edward Briggs,	*San Francisco*,	Mechanical Eng. *Sp.*
Passmore, Irvin,	*Grampian, Pa.*,	Latin
Patriquin, Jean A.,	*Cholame*,	History
Patterson, Frances Doremus,	*East Orange, N. J.*,	History
Patterson, Henry Samuel,	*East Orange, N. J.*,	Economics
Patterson, Letitia,	*East Orange, N. J.*,	English
Patterson, Mary Virginia,	*Pittsburg, Kan.*,	German
Patterson, Rose,	*San Jose*,	Entomology
Payne, Rose,	*San Jose*,	English
	A. B., Stanford, 1898.	
Pearson, Eleanor Brooks,	*Palo Alto*,	Drawing
	A. B., Univ. of Mich., 1891.	
Pearson, Harold Peter,	*Evanston, Ill.*,	Law
	A. B , Stanford, 1898.	
Peck, Allan Earle,	*San Diego*,	Physiology
Peck, Anne Earle,	*San Diego*,	History
Peck, Isabel Linton,	*San Diego*,	History
Peckham, Anna Brown,	*Kingston, R. I.*,	Mathematics
	A. B., Wellesley Coll., 1893.	
Peckham, Harry Augustus,	*Watsonville*,	Physiology
Penhallow, Henry Balch,	*San Francisco*,	Electrical Eng.
Perrin, Fleda Floy,	*San Jose*,	German *Sp.*
Perry, Frederic Jewell,	*San Francisco*,	Law
† Peter, Mary,	*Pomona*,	English
	A. B., Stanford, 1897.	
Petree, Louis Edward,	*Kirksville, Mo.*,	Law

Phelps, Bertha Margaret,	*Los Angeles,*	Latin
Phelps, Jane Harriet,	*Palo Alto,*	Drawing *Sp.*
Phelps, John Roy,	*San Jose,*	Physiology *Sp.*
Phelps, Mary Mabel,	*San Jose,*	English
Phillips, Maybelle Aveline,	*Ontario,*	Latin
Picher, Oliver S.,	*Pasadena,*	Greek
Pickeman, Robert,	*Montrose, Scotland,*	Zoology *Sp.*
Pickering, Louis Erroll,	*Portland, Or.,*	Ethics *Sp.*
Pierson, Charles J.,	*Auburn, Neb.,*	Zoology
	A. B., Stanford, 1897.	
Pitcher, Yrene,	*Dixon,*	Mathematics
Pitman, Homer Fletcher,	*Palo Alto,*	Physiology
Plested, Alice Gordon,	*Denver, Colo.,*	Latin
Plested, Edith Sophia,	*Denver, Colo.,*	Hygiene *Sp.*
Plested, William Gordon,	*Denver, Colo.,*	Bionomics
Poindexter, Henry Tyhrie,	*Dillon, Mont.,*	Geology
	A. B., Stanford, 1897.	
Polhemus, John Hart,	*San Francisco,*	Law
Polk, Martin Collins,	*Cohasset,*	Civil Eng.
Pomeroy, Horace,	*Oswego, Or.,*	Electrical Eng.
	A. B., Stanford, 1897.	
Poorman, Samuel, Jr.,	*San Francisco,*	Law
Pope, Norris Fowler,	*Santa Cruz,*	History
Porter, Edith Virginia,	*Eureka,*	Latin
Porter, Victor Abbott,	*Salinas,*	Mechanical Eng. *Sp.*
† Porter, Wilmatte,	*San Diego,*	Physiology
	A. B., Stanford, 1898.	
Potter, Cara Celestia,	*New York, N. Y.,*	French *Sp.*
Potter, Eliot Gray,	*Oakland,*	Chemistry
Potter, William Dunning,	*Fresno,*	Geology
Powell, Burton,	*Chicago, Ill.,*	Law
Pratt, Elizabeth Adelaide,	*San Francisco,*	English
Pratt, Orville Charles,	*Palo Alto,*	Law
Preeman, Jacob Meyer,	*Kansas City, Mo.,*	Mathematics
† Price, George Clinton,	*Palo Alto,*	Zoology
	B. S., De Pauw Univ., 1890; Ph. D., Stanford, 1897.	
Price, William Wightman,	*Palo Alto,*	Zoology
	A. B., Stanford, 1897.	
Prichard, William Anthony,	*Portsmouth, O.,*	Geology
Putnam, Lida,	*Spokane, Wash,*	English
	B. L., Drake Univ., 1892.	
Quayle, Charles,	*Oakland,*	Law

Quinn, Albert Allan,	*Palo Alto,*	Geology
Quinn, Elizabeth Anna,	*Palo Alto,*	German *Sp.*
Radovich, Spiro Bozo,	*San Jose,*	Law
Rambo, William Taylor,	*San Francisco,*	Economics
Ramsay, Georgina,	*Palo Alto,*	History
Rawdon, Blanche Louise,	*Palo Alto,*	English
Ray, Clinton Dewitt,	*Fillmore, Utah,*	English *Sp.*
Ray, Fred,	*Santa Barbara,*	Mechanical Eng.
Raymond, Irving C.,	*Palo Alto,*	History *Sp.*
Raynes, Francis Edward,	*Yreka,*	Physiology *Sp.*
Rea, Ernest Lloyd,	*San Jose,*	Latin
Redman, Oda,	*Watsonville,*	English
Rees, George Llewellyn,	*Philadelphia, Pa.,*	Physiology
Reilay, Louella May,	*Oakland,*	English
	A. B., Stanford, 1895.	
Reynolds, Marion,	*West Side,*	History
Rice, John Bermingham,	*Santa Barbara,*	Geology
	A. B., Stanford, 1897.	
Richards, Charles Lenmore,	*Austin, Nev.,*	Law *Sp.*
Richmond, Frank Adams,	*Redlands,*	Chemistry *Sp.*
Riddell, Charles Francis,	*Coronado,*	Economics
Riddell, Laura Grace,	*Coronado,*	English
Rider, Ella Moore,	*Napa,*	Latin
Riedeman, John William,	*College Park,*	German
	A. B., Wallace College, 1880.	
Riley, Frank Branch,	*Portland, Or.,*	Economics
Ripley, Lila Irene,	*San Jose,*	English
Rippetoe, James Joseph,	*Portland, Or.,*	Chemistry
	A. B., Campbell Univ., 1887.	
Robbins, J. Clarke,	*Palo Alto,*	Ethics *Sp.*
Robbins, Louise May,	*Concord, N. H.,*	Physiology
Robbins, Mary Louise,	*Washington, D. C.,*	English
	Ph. B., Cornell Univ., 1891.	
Roberts, Charles Royden,	*San Diego,*	Ethics
Roberts, Frank Taft,	*Salt Lake City, Utah,*	Civil Eng.
Roberts, Gilchrist Porter,	*Stockton,*	Economics
Roberts, Milnor,	*Colorado Springs, Col.,*	Geology
Rodgers, Walter Clarence,	*San Francisco,*	Law
Rodolph, Frank Erwin,	*San Francisco,*	Physiology
Rogers, Frank Fowler,	*Allentown, N. J.,*	Latin
Rogers, Guy,	*Los Angeles,*	History
Rolfe, Frank,	*Los Angeles,*	Geology

Romney, Joseph MacAuslin, *Salt Lake City, Utah,* History
B. S., Cornell Univ., 1886.

Rood, Edson Dudley, *San Diego,* Economics
Root, Maud Mary, *Bloomington, Ill.,* Education *Sp.*
Rosborough, Joseph James, *Oakland,* Law
Rose, Hugh, *Denver, Colo.,* Geology
Rose, Stella, *Pomona,* Hygiene
Rosebrook, Joseph Wilton, *Palo Alto,* Drawing *Sp.*
Rosencrantz, Esther, *San Francisco,* Physiology
Ross, Hugh Leslie, *Steubenville, O.,* Law
Rosseter, Frank Stuart, *Redwood City,* English
A. B., Marietta Coll., 1877.

Roth, Emma Katherine, *Pasadena,* German
Rothrock, Edward Hiram, *Spokane, Wash.,* Law
Rounds, Goldie Jean, *Vallejo,* History
Rounds, Ida May, *Vallejo,* History
Roush, Thomas, *Mayfield,* Bionomics
Rowell, Gertrude Frances, *Easton,* Education
† Ruddell, Frank Stallo, *Indianapolis, Ind.,* Law
A. B., Stanford, 1897.

Rush, Frederick Winn, *Suisun,* Geology
Rush, Richard Ira, *Suisun,* Electrical Eng.
Rusk, Hester, *Milwaukee, Wis.,* Hygiene *Sp.*
Rusk, John Perley, *Milwaukee, Wis.,* Economics
Russ, Arthur Charles, *San Jose,* Law
Russ, Frederick George, *Berkeley,* Law *Sp.*
Sanderson, Fred Grant, *Palo Alto,* Latin
A. B., Beloit Coll., 1894.

Sayeki, Hanshiro, *Tottori, Japan,* Mechan. Eng. *Sp.*
Sayer, Eugene Young, *Denver, Colo.,* Electrical Eng.
Schaaf, Marie E., *San Jose,* History
Schallenberger, Margaret E., *Palo Alto,* Education
Schanck, Francis Raber, *Elsinore,* Mechanical Eng.
Schlobach, Percival J., *Palo Alto,* German
Schmutzler, Charles Frederick, *Watertown, Wis.,* German
Schneider, Fred'k Arthur, *College Park,* History
Schopbach, Mabel, *Pasadena,* Latin
Schott, Franklin Tuthill, *Antioch,* Physics
Schulte, William Henry Gerard, *San Francisco,* Law
A. B., Stanford, 1895.

Schwartz, Charles Ernest, *Carthage, Mo.,* Economics
Schwarzkopf, Rudolph Hermann, *New York, N. Y.,* Physiology *Sp.*

Schwarzkopf, Grace Hoon,	*New York, N.Y.,*	Physiology *Sp.*
Scofield, Sarah Coates,	*San Antonio, Tex ,*	History
Scoville, George Albert,	*Corona,*	Electrical Eng.
Seale, Alvin,	*Fairmount, Ind.,*	Zoology *Sp.*
Seger, Mary Isabel,	*Riverside,*	Physics
Selby, Georgia Alice,	*Indianapolis, Ind.,*	History
Senow, Hachiro,	*Sendai, Japan,*	Economics *Sp.*
Serpas, Carlos,	*Jucuapa, El Salvador, C. A.,*	Civ. Eng.
Sewall, Edward Cecil,	*Portland, Or.,*	Physiology
Seward, George Lewis,	*San Francisco,*	Physiology
Shaw, Bertha Marie,	*San Francisco,*	Romanic Lang.
† Shaw, Walter Robert,	*Moline, Ill.,*	Botany

A. B., Stanford, 1892; A. M., 1894; Ph. D., 1897.

Shelley, Helen Hjerleid,	*Berryessa,*	History
Shepard, Charles Hubert,	*Compton,*	Chemical Eng.
Shepler, Katharine Marvin,	*Council Bluffs, Ia.,*	Latin
Shibley, Ernest Harvey,	*Miller,*	Mathematics
Shoemaker, Clara Maude,	*Los Gatos,*	French
Shoemaker, Harlan,	*Sioux City, Ia.,*	Physiology
Shoemaker, Harry Ives,	*Tacoma, Wash.,*	Chemistry
Short, Frank Rice,	*Glenbrook, Nev.,*	Geology
Simons, Perry Oveitt,	*Riverside,*	Electrical Eng.
Simpson, Mary Sheal,	*Grand Rapids, Mich.,*	English
Sisson, Genevra,	*Oakland,*	Education
Skillings, Mary Ellen Covington,	*Alameda,*	Education
Skinner, Annabell,	*Berkeley,*	Hygiene *Sp.*
Sladen, Harry Stinson,	*Portland, Or.,*	Electrical Eng.
Sloan, William Henry,	*Palo Alto,*	Hygiene *Sp.*
Smith, Elinor Alma,	*Portland, Or.,*	Romanic Lang.
Smith, Everett Wallace,	*Dorchester, Mass.,*	English
Smith, Helen Knight,	*Portsmouth, N. H.,*	Greek
Smith, Herman Charles,	*Portland, Or.,*	Mechanical Eng.
Smith, Joseph Clearant,	*Corvallis, Or.,*	Law
Smith, L. Agnes,	*San Diego,*	English
Smith, Leigh Richmond,	*San Jose,*	Latin

A. B., Princeton Coll., 1872; B. D. and A. M., 1875.

Smith, Norwood Browning,	*San Francisco,*	Mathematics
Smith, Paschal Roberts, Jr.,	*Deming, N. M.,*	Law
Smith, Rea Everett,	*Los Angeles,*	Physiology
Smythe, Charlotte Sumner,	*Santa Rosa,*	Latin
Snodgrass, Robert Evans,	*Ontario,*	Zoology
Snow, Edith Huntington,	*Lawrence, Kan.,*	Ethics *Sp.*

Snow, William Appleton,	*Lawrence, Kan.*,	Entomology
B. S., Univ. of Kansas, 1891; M. S., 1894.		
Snyder, John O.,	*Palo Alto*,	Zoology
A. B., Stanford, 1897.		
Sobey, Christabel Rose,	*San Francisco*,	English
Sobey, Gifford Lyne,	*San Francisco*,	Physiology
Solen, John William,	*Redwood City*,	Law
Soper, Alexander Coburn, Jr.,	*Chicago, Ill.*,	Physiology
Southard, Carroll O'Brien,	*Palo Alto*,	Chemistry *Sp.*
Spaulding, Milo Herrick,	*Kalispel, Mont.*,	Zoology
Speddy, Howard Hitchcock,	*Alameda*,	Law
Spencer, Louis Bernard,	*Ogden, Utah*,	Civil Eng.
Spencer, Rollin Herbert,	*Council Bluffs, Ia.*,	Latin
A. B., Stanford, 1898.		
Spilman, Ruth,	*Sacramento*,	English
Spinks, Edward Lincoln,	*Merced*,	Economics
Spooner, D. Brainerd,	*Boston, Mass.*,	Classical Philology
Sprague, Helen M.,	*Gilroy*,	History
Squire, Charles Henry,	*Palo Alto*,	History
A. B., Stanford, 1898.		
Stadtmüller, Daniel Ward,	*San Francisco*,	Economics
Stafford, Percy Monroe,	*Santa Barbara*,	Civil Eng. *Sp.*
Stafford, Susie Ross-Lewin,	*Santa Ana*,	German *Sp.*
Stafford, Walter Alfred,	*Santa Ana*,	Mathematics
A. B., Stanford, 1895.		
Staley, Arthur,	*Placentia*,	English
Stanford, Mildred,	*Olympia, Wash.*,	English
Stanhope, Burton Perle,	*Palo Alto*,	Latin
Starbuck, Anna Diller,	*Palo Alto*,	Education
Starbuck, Flora Edna,	*Bridgeport, Ind.*,	Latin
Stark, Mollie Pearl,	*San Jose*,	Romanic Lang.
Starr, Louis Monnaster,	*San Francisco*,	Law
Stearns, Stella Burger,	*Pacific Beach*,	Education
A. B., Univ. of Minn., 1892.		
Stebbins, Londa Loleta,	*Oakland*,	Law *Sp.*
Steel, Harry Bismark,	*La Grande, Or.*,	Electrical Eng.
Steel, Edgar Willis,	*Edna*,	Chemistry
Stephens, Arthur Harlan,	*Butte, Mont.*,	Electrical Eng.
Stephens, Eleanor Harlow,	*College Park*,	English
Sterne, Kathlyn Frances,	*Mariposa*,	Education *Sp.*
Stevens, Maude Frances,	*Oroville*,	History
Stevens, Nettie Maria,	*Chelmsford, Mass.*,	Physiology

Stevenson, Emelie,	*Palo Alto,*	English
Stewart, Arthur Bonbright,	*Beaver Falls, Pa.,*	Law
Stewart, Gwendolyn,	*Santa Cruz,*	Economics
Stewart, Justin Henry,	*Westminster,*	History *Sp.*
Stewart, Mary,	*Santa Cruz,*	Physics
Stillman, Cara,	*Palo Alto,*	English
Stillman, Minna,	*Palo Alto,*	Mathematics
Stocking, Minnie,	*San Luis Obispo,*	Education *Sp.*
Stoltenberg, Clara S.,	*Los Angeles,*	Physiology
A. B , Stanford, 1896 ; A. M., 1897.		
Storey, Thomas Andrew,	*Palo Alto,*	Physiology
A. B., Stanford, 1896.		
Storke, Thomas More,	*San Francisco,*	Economics
Story, Charles Lewis,	*Dixon,*	English
A. B., Pacific Methodist Coll., 1897.		
Stowe, Frank Rabineau,	*Menlo Park,*	Electrical Eng.
Stowe, John Reynolds,	*Menlo Park,*	Law
Strange, Bessie,	*Palo Alto,*	Chemistry *Sp.*
Strohn, Clarence Burton,	*Los Angeles,*	History
Strohn, Roys Nelson,	*Los Angeles,*	English
Strong, Archibald McClure,	*Pasadena,*	Chemistry
Strout, Ernest Allen,	*Sebastapol,*	Geology
Strowbridge, Mary Howard,	*Portland, Or.,*	German
Strunsky, Anna,	*San Francisco,*	English *Sp.*
Styles, Henry Eckford,	*San Francisco,*	Law
Sullivan, Minnie Isadora,	*Santa Cruz,*	Chemistry
Ph. B., Univ. of California, 1895.		
Susman, Leo Henry,	*San Francisco,*	Economics
Sutherland, William Angus,	*Oakland,*	Law *Sp.*
Suzzallo, Anthony Henry,	*San Jose,*	Ethics
Swain, Robert Eckles,	*Palo Alto,*	Chemistry
Swanson, Tillie Lucretia,	*Madison, Kan.,*	History
Swenson, John Canute,	*Pleasant Grove, Utah,*	Economics
Sweetser, Charles Herbert,	*Wakefield, Mass.,*	Civil Eng.
Swett, Helen,	*Martinez,*	Zoology
Swett, John French,	*Martinez,*	Economics
Swindells, Charles Jay,	*Tacoma, Wash.,*	Law
Switzer, John Marion,	*Palo Alto,*	History
Symonds, Nathaniel Gardner,	*Los Gatos,*	Electrical Eng.
Taber, Clara Mabel,	*Elko, Nev.,*	Mathematics
Taber, Walter Cox,	*Stockton,*	Chemistry
Taggart, Louis Edward,	*Grand Rapids, Mich.,*	Physics *Sp.*

Takagi, James June,	*Tottori, Japan,*	Electrical Eng.
Talbert, Franklin Lilburn,	*Santa Clara,*	Economics *Sp.*
Talbert, Earle,	*San Francisco,*	Civil Eng.
Taylor, Florence,	*Steubenville, Ohio,*	Latin
Taylor, George Burrowes,	*Edwardsville, Ill.,*	Economics
Taylor, Henry Huntley,	*San Francisco,*	History
Taylor, Winifred Hawkins,	*Steubenville, Ohio,*	English
Temple, Grace Douglas,	*Los Gatos,*	Latin
Thayer, Harold Adams,	*Denver, Colo.,*	Chemistry
Theobald, Harry Couch,	*Palo Alto,*	English
Thies, Arno Grote,	*Denver, Colo.,*	Mechanical Eng.
Thoits, Edward Clair,	*Palo Alto,*	History
Thomas, Benjamin,	*Palo Alto,*	Physiology
A. B., Stanford, 1897.		
Thomas, Chester A.,	*Los Angeles,*	Geology
Thomas, Clarence Lot,	*Storm Lake, Ia.,*	History
Thomas, Edward Lewis,	*Santa Rosa,*	Economics *Sp.*
Thomas, John Shepard,	*San Francisco,*	Geology
Thomas Monroe Hardon,	*Palo Alto,*	Law
†Thompson, Charles Lawrence,	*Santa Barbara,*	Law
A. B., Stanford, 1897.		
Thompson, Frank Ernest,	*San Jose,*	Physiology *Sp.*
Thompson, Mary,	*Milwaukee, Wis.,*	English
Thompson, Ray Walter,	*Palo Alto,*	Chemistry
Thompson, Walter James,	*Palo Alto,*	Law
Thoms, Clifford Corlton,	*Rialto,*	Geology
Thorne, Grace Lucretia,	*San Francisco,*	German *Sp.*
Tobiason, Ole,	*Brookfield, Wash.,*	Civil Eng.
Toll, Able Hyde,	*Baldwinsville, N. Y.,*	Civil Eng.
Toombs, Bertha C.,	*Modesto,*	French
Townsend, Arthur Chisholm,	*San Jose,*	Physiology
Townsend, Clarence Robert,	*Durango, Colo.,*	Mechanical Eng. *Sp.*
Townsend, Mabel Anna,	*Palo Alto,*	Chemistry
Townsend, Percy Seymour,	*Palo Alto,*	Latin
Townsend, Vera,	*Palo Alto,*	Latin
Trace, Gertrude May,	*Mayfield,*	Mathematics
Traylor, Lucy Lowe,	*Pasadena,*	English
A. B., Stanford, 1898.		
Tripp, Don Everett,	*Vallejo,*	Civil Eng.
Truslow, Howard,	*San Francisco,*	Electrical Eng.
Tsukamoto, Chuzaburo,	*Kyoto, Japan,*	Electrical Eng.

†Work completed, Summer, 1897.

Tubbs, Julia Benson,	*Ontario,*	English
Tucker, Adelaide M.,	*Palo Alto,*	Physiology
Tucker, Mary Frances,	*Palo Alto,*	History
Turcot, Josephine May,	*Santa Cruz,*	French
Turner, Harry Coburn,	*Los Angeles,*	Geology
A. B., Stanford, 1897.		
Turpin, Jere,	*Carrollton, Mo.,*	Chemistry
Twieg, William Charles,	*Cleveland, O.,*	Greek
Uihlein, Joseph Edgar,	*Milwaukee, Wis.,*	English *Sp.*
Uri, Sol,	*San Francisco,*	Chemistry
Van Fossen, Frank Bradley,	*Dunsmuir,*	Electrical Eng.
Van Kaathoven, Abram Jean,	*San Jose,*	Physiology
Van Norden, Ottomar Hoghland,	*Sacramento,*	History
Veuve, Erle Le Roy,	*Port Townsend, Wash.,*	Civil Eng. *Sp.*
Viall, Benjamin Thomas,	*David City, Neb.,*	Electrical Eng.
Victor, Royal Charles,	*San Bernardino,*	Law
Vinyard, Helen Plato,	*Santa Monica,*	Physiology
Vose, Richard Alden,	*Los Angeles,*	Economics
Wadsworth, Philip Arthur,	*Oakland,*	Mathematics
Wagner, Juliet Anttoinette,	*San Francisco,*	English
Waite, Charles Edgar,	*Riverside,*	Economics
Waite, Marion Pishon,	*Riverside,*	Electrical Eng.
Waldorf, John Taylor,	*San Jose,*	English *Sp.*
Walker, Anna Martha,	*Glen Moore, Pa.,*	Latin
A. B., Bryn Mawr Coll., 1895.		
Walker, Delia,	*Redwood City,*	Drawing *Sp.*
Walker, Paul Elliott,	*Holton, Kan.,*	Economics
Wallace, Anna Theresa,	*Chicago, Ill.,*	Latin
Walter, Herbert David,	*San Francisco,*	English
Walter, John Isadore,	*San Francisco,*	Greek
Walter, Mary E.,	*San Jose,*	English
Wardall, Clarence Marion,	*Monrovia,*	Law
Wardall, Ralph Hewitt,	*Duarte,*	History
Warner, Arthur Judson,	*Marietta, O ,*	Chemistry
A. B., Marietta Coll., 1889.		
Warren, Bertha,	*Santa Clara,*	Drawing *Sp.*
Warren, Eugene,	*Silver City, N. M.,*	Law
Warren, Howard Saunders,	*Bucksport, Me.,*	Electrical Eng.
Wathey, Charles Kane,	*Butte, Mont.,*	Electrical Eng.
Watson, Dorothea B.,	*San Francisco,*	Physiology *Sp.*
Watson, Florence Elizabeth,	*San Diego,*	Education
Watson, Ralph Andrew,	*Salem, Or.,*	Law *Sp.*

Weatherwax, Cliff M., *Aberdeen, Wash.*, Economics
Weaver, Anna Frances, *Logansport, Ind.*, Classical Philology
A. B., Stanford, 1897; A. M., 1898.
Webb, Louis K., *Los Angeles*, Education
B. S., Univ. of Mich., 1878.
Webber, Harrison Ogilvie, *East Riverside*, Electrical Eng. *Sp.*
Wehnér, Ida, *Evergreen*, German
Weir, Mabel McQueen, *Boone, Ia.*, Classical Philology
Welch, Horace Herbert, *Los Angeles*, Physics
A. B., Stanford, 1897.
Welges, Eleanor Kathrine, *Woodland*, Greek
West, Arthur Benjamin, *Denver, Colo.*, Law
West, John Franklin, *Paso Robles*, Mathematics
Westall, Marion Merrick, *Palo Alto*, Law *Sp.*
Westall, Samuel Francis, *Palo Alto*, Civil Eng. *Sp.*
Westcott, Robert, *Palo Alto*, Latin
Wheeler, Martha Matilda, *Terrace, Minn.*, Education
Whitaker, Albert Conser, *Los Gatos*, Economics
White, Emile, *San Francisco* Law
White, Hilton Richmond, *Tacoma, Wash.*, Law
White, Joseph Ephriam, *Santa Barbara*, Geology
White, Mary, *Malden, Ill.*, History
White, Will Rainwater, *Olympia, Wash.*, Civil Eng.
Whiting, Lulu Natalia, *Mountain View*, Latin
A. B., Stanford, 1897.
Whitlock, Henry Gray, *Los Angeles*, Law
Whitmire, William Joseph, *San Jose*, Law *Sp.*
Whittier Florence Bertha, *Riverside*, Greek
Whittier, Wilmot Edgar, *Riverside*, Economics
Wickersham, Lloyd Blauvett, *Portland, Or.*, Electrical Eng.
Wiel, Harry Isaac, *San Francisco*, Physiology
Wier, Jennie Elizabeth, *Newark*, History
Wight, Otis Buckminster, *Palo Alto*, Physiology
Wight, William Franklin, *Allegan, Mich.*, Botany
B. S., Mich. Agr. Coll., 1894.
Wigle, Ruby Beatrice, *Palo Alto*, German
Wilbur, Ray Lyman, *Riverside*, Physiology
A. B., Stanford, 1896; A. M., 1897.
Wilkinson, Frank E., *Salt Lake City, Utah*, Law *Sp.*
Williams, Edwin Henry, *San Jose*, Economics
Williams, Ernest Stanwood, *Los Angeles*, Economics
Williams, Frederick Langston, *Palo Alto*, Bionomics

Williams, Helen Webster,	*Redlands,*	Latin
Williams, Mary Ida,	*Cardinal, Ont.,*	English
Williams, Simeon Waldo,	*San Jose,*	Law
Williston, Alice Bell,	*San Jose,*	Latin
Wills, Frank Durack,	*Antioch,*	Law
Wilson, Ernest,	*Palo Alto,*	History
Wilson, Evangeline,	*Elmira,*	German
Wilson, Joseph Elmer,	*Oakland,*	English *Sp.*
Wilson, Lida,	*Vallejo,*	English
Wilson, Llewellyn Burt,	*Palo Alto,*	Economics
Wilson, Philip Louis,	*Los Angeles,*	Law *Sp.*
Wilson, Samuel Mountford,	*San Francisco,*	Law
Wilson, William Cyrus,	*Santa Barbara,*	Drawing *Sp.*
Wiltz, Bertha Amelia,	*San Jose,*	Physiology
Winn, Ann Bartlett,	*San Diego,*	German
Winn, Lera,	*San Diego,*	Latin
Winslow, Martha Minerva,	*Aurora, Ill.,*	Education
A. B., Oberlin Coll., 1879.		
Wirt, Charlotte,	*Santa Rosa,*	Education
Wise, George Douglas,	*San Francisco,*	English
Wolfenbarger, Frances B.,	*San Jose,*	English
Wood, Elsie Maud,	*Palo Alto,*	History
Woodin, Irving Oakley,	*Independence,*	Physiology *Sp.*
Woodruff, George Herbert,	*Watertown, Conn.,*	History
Wootten, Joseph Bivens,	*Linden,*	Education *Sp.*
Worstell, Luneti McCreary,	*Wallace, Idaho,*	Ethics *Sp.*
Wright, Annie Louise,	*Palo Alto,*	Mathematics
A. B., Stanford, 1896; A. M., 1897.		
Wright, Charles Frederick,	*Palo Alto,*	History
A. B., Stanford, 1896; A. M., 1897.		
Wright, Fred Hard,	*Palo Alto,*	Electrical Eng.
Wright, Max Goethe,	*Grand Rapids, Mich.,*	Romanic Lang.
A. B., Stanford, 1896; A. M., 1897.		
Wright, George Henry Burwell,	*Redlands,*	English
Wright, William Quimbly,	*San Jose,*	Physics
Wurr, Dora Desideria,	*Harrison,*	English
Wrigley, William Alfred,	*Glyndon, Minn.,*	Physiology
Wyckoff, John Wesley,	*Ukiah,*	Hygiene
Wyman, Elliott Bailey,	*Los Angeles,*	Chemistry *Sp.*
Yoch, Josephine Rose,	*Santa Ana,*	Classical Philology
Yoshioka, Swazo F.,	*San Francisco,*	Electrical Eng.
Yost, George Herbert,	*Arroyo Grande,*	English

Youens, Alfred Vincent,	*Galveston Texas*,	Electrical Eng. *Sp.*
Young, Agnes Elizabeth,	*San Jose*,	Drawing *Sp.*
Young, Lemuel Watt,	*Bradford, Pa.*,	Physiology
Young, Willard Tuthill,	*Kelseyville*,	Physiology
Zahn, Edwin Leonard,	*San Jose*,	German
A. B., Ohio Wesleyan Univ., 1895; A. M., 1897.		
Zellen, Michael J.,	*Philadelphia, Pa.*,	Ethics *Sp.*
Zschokke, Arthur Jacob,	*Palo Alto*,	Mechanical Eng.
Zschokke, Anna Probst,	*Palo Alto*,	Ethics *Sp.*
Zschokke, Theodore Christian,	*Palo Alto*,	History
Zucker, Emmabelle Hudson,	*Oakland*,	English
Bingham, Katharine Tarr,	*Fresno*,	*English*

† Work completed, Summer, 1897.

SUMMARIES.

By Classes.

In Graduate Standing	106
Undergraduates	897
Special Students	221
Total (men, 766; women, 458)	1224

By Major Subjects.

	Graduate.	Undergraduate.	Special.	Total.	*No. of students in all classes.	*Total reg'tr'n in all classes.
Greek	2	13	—	15	72	96
Latin	12	56	1	69	141	206
Classical Philol.	1	5	—	6	28	28
German	3	37	10	50	460	584
Romanic Lang.	4	20	5	29	300	319
English	15	115	27	157	534	760
Psychology	2	3	—	5	36	59
Ethics	1	17	14	32	190	215
Bionomics	—	10	—	10	162	169
Education	6	24	8	38	211	273
History	10	107	11	128	346	551
Economics	2	76	13	91	340	444
Law	5	109	25	139	126	233
Mathematics	4	35	4	43	193	310
Physics	2	11	2	15	100	109
Chemistry	5	38	12	55	171	208
Botany	3	8	2	13	60	69
Entomology	1	5	2	8	9	9
Hygiene	—	4	11	15	534	615
Physiology	9	71	23	103	117	160
Zoology	6	17	7	30	80	86
Geology	4	40	4	48	150	178
Drawing	3	2	13	18	75	75
Civil Eng	3	25	8	36	139	172
Mechanical Eng.	1	12	9	22	68	118
Electrical Eng.	2	37	10	49	34	73

*First Semester.

By Residence.

California	835	Nebraska	6
Oregon	52	Idaho	5
Washington	37	Texas	4
Pennsylvania	25	Connecticut	3
Colorado	23	New Hampshire	3
Ohio	22	West Virginia	3
Illinois	20	Kentucky	2
Utah	16	Wyoming	2
Indiana	15	Indian Territory	1
Massachusetts	13	Louisiana	1
Montana	12	Maine	1
New Mexico	11	Rhode Island	1
Iowa	11	South Dakota	1
New York	10	Japan	10
Kansas	9	Canada	5
Missouri	9	Brazil	2
District of Columbia	8	Hawaii	2
Minnesota	8	Central America	1
Nevada	7	England	1
Wisconsin	6	Holland	1
New Jersey	6	Mexico	1
Michigan	6	Scotland	1
Arizona	6		

California by Counties.

Alameda	42	Riverside	20
Butte	6	Sacramento	9
Contra Costa	7	San Bernardino	19
Colusa	4	San Benito	7
Eldorado	2	San Diego	35
Fresno	6	San Francisco	101
Glenn	1	San Joaquin	9
Humboldt	8	San Luis Obispo	19
Inyo	1	San Mateo	18
Kern	3	Santa Barbara	12
Lake	6	Santa Clara	284
Los Angeles	82	Santa Cruz	13
Madera	1	Shasta	2
Mariposa	1	Solano	18
Marin	6	Sonoma	12
Mendocino	8	Siskiyou	4
Merced	1	Stanislaus	11
Monterey	11	Sutter	1
Napa	13	Tulare	2
Nevada	1	Ventura	5
Orange	15	Yolo	5
Placer	4		

Degrees Conferred.

MAY 26, 1897.

Bachelors of Arts.

In Greek:

Frederick Louis Dulley.

In Latin:

William Carl Bronco,
William John Dunstan,
Nettie Eliza Hindry,
Grace Cecelia Morgan,
Joseph Pomeroy Nourse,
George Humphry Roach,
Rose Flora Smith,
Mary Clifford Webster,
Lulu Natalia Whiting.

In German:

Ernest Henry Bierman,
Clara Eberhard,
Charlotte A. Knoch,
Dora Estey Moody.

In English:

Edith L. Boyd,
Bertha Hyde Braly,
Susan Brown Bristol,
Alice Maria Colt,
Margaret Deming,
Maude Flint,
Miriam Frank,
Mary Freeman,
George Ernest Furbush,
Maude Agnes Green,
Annie Cabe Hervey,
Elizabeth Hervey,
Edward Maslin Hulme,
Laura Garner James,
Mary Frances Leddy,
Laura Louise Mann,
Lottie Mabel Manzer,
Jennie June Peery,
Charlotte Van Cleve Phillips,
Jessie A. Ryan,
Harlan Clinton Smith,
William Bittle Wells.

In Education:

Joel Sheldon Cotton,
Grace Eva Doughty, B. S.,
George Matthew Green,
Alice May Jordan, B. S.,
John T. McManis,
Llewellyn Bell Mallory,
David Samuel Snedden,
Lena Calhoun Young.

In History:

Roy Page Ballard,
Franklin Elisha Bump,
Evans Holbrook,
Merle De Vore Johnson,

Fleming Isaiah Burcham, Edith Monica Jordan,
James Taylor Burcham, Burt Ornon Kinney,
Ortha Belle Fielder, Francis Webster Lake,
Maud Louisa Grieb, Miriam Evalyn Maclaren,
Ada Elizabeth Herold, Wilson Clark Price,
Helen Younger.

In Economics and Sociology :

Edward Hagerman Arnold, Agnes Emmons Howe,
James Warren Bell, James Rittenhouse Nourse,
Harry Conwell Hazzard, Burton Murray Palmer,
Albert Samuel Hiatt, A. B., William Wightman Price,
Alexander Townsend Hosmer, Herbert Randall Straight,
Joseph Henry Timmons.

In Law :

Geo. Washington Garrett, A. B., Robert Joseph O'Neil,
William Pitt Gifford, John Mason Ross.

In Mathematics :

Mollie Saidee Bloom, Benjamin Franklin Condray, A.B.,
Carl Gundersen.

In Physics :

Alfred Ludvig Georg Gundersen, Lillian Emeline Ray,
Perley Gilman Nutting, Horace Herbert Welch.

In Chemistry :

Pierre Alexander Allaire, George Herbert Baldwin,
Harry Coburn Turner.

In Hygiene and Organic Training :

Walter Wells Davis, B. S.

In Physiology :

Anna Matilda Allen, Louis Hartnagel Redon,
Marguerite May Blake, Benjamin Thomas,
Frank Cameron Matthews, Thomas Marion Williams.

In Zoology :

George Bliss Culver, ohn O. Snyder.

In Geology:

Henry Tyhrie Poindexter.

In Drawing and Painting:

Fanny Howe Mitchell.

In Civil Engineering:

Clinton Sumner Burns, Henry Zenas Osborne, Jr.,
Minot Tully Pratt, Charles Stockton Pope.

In Mechanical Engineering:

Charles John Dulley, Fred Jost,
Chris Henne, Everett Parker Lesley,
William Lee Johnson Bertram Nelson Young.

In Electrical Engineering:

Charles Francis Aaron, Adolph G. Kaufman,
John Duncan Boyd, Frank Sayre Leach,
Gerhardus Johan Gilles Brandt, Jr., Horace Pomeroy,
Frank Lamond Entler, Edwin Gardner Robinson, Jr.,
George Ravenscroft Greenleaf, George Henry Sampson,
Charles Edward Hogle, William Henry Workman, Jr. A. B.

Masters of Arts.

In Latin:

Bertha de Laguna, A. B.

In Romanic Languages:

Max Goethe Wright, A. B.

In English:

Ermina Ferris, B. S., Kenneth Gordon Matheson,
Irvin Erastus Outcalt, A. B.

In Psychology:

Henry Gordon Harwood, A. B.

In Education:

Caroline Frear, B. S., Henry Davidson Sheldon, A. B.

In History:

Anna Henrietta Martin, A. B., Milo Asem Tucker, A. B.,
Elmer Isaiah Miller, A. B., Charles Frederick Wright, A. B.

In Economics and Sociology:

David Hutton Webster, A. B.

In Mathematics:

David Lafayette Arnold, A. B., Hans Frederick Blichfield, A. B.,
Annie Louise Wright, A. B.

In Chemistry:

Carleton Edgar Durrell, A. B.

In Physiology and Histology:

William Freeman Snow, A. B.

In Zoology:

Norman Bishop Scofield, A. B.

Engineer.

In Electrical Engineering:

Elmer Ellsworth Farmer, A. B.

Doctors of Philosophy.

Noah Fields Drake, A. M., John Van Denburgh, A. M.

SEPTEMBER 10, 1897.

Bachelors of Arts.

In English:

Mary Peter.

In History:

John Felix Barnett.

In Law:

Frank Stallo Ruddell, Charles Lawrence Thompson,

In Geology:
John Bermingham Rice.

In Electrical Engineering:
Harry Joel Bean.

Masters of Arts.

In Physiology and Histology:
Louis Samuel Kroeck, B. S., Clara S. Stoltenberg, A. B.,
Ray Lyman Wilbur, A. B.

Doctors of Philosophy.

George Clinton Price, B. S., Walter Robert Shaw, A. M.

JANUARY 13, 1898.

Bachelors of Arts.

In Latin:
Edith Louise Hill, Rollin Herbert Spencer.

In English:
Clara Avery, Rose Payne,
Gertrude Mackintosh, Lucy Lowe Traylor.

In Bionomics:
Charles John Dyke.

In Education:
Alexandra Fay.

In History:
Charles Henry Squire.

In Law:
William Albert Conneau, Harold Peter Pearson.

In Chemistry:
Katharine Haskell, Hatsuwo Nakamura.

In Physiology and Histology:
Wilmatte Porter.

In Civil Engineering:
De Witt Clinton Brewer, Edgar W. McCormack.

In Electrical Engineering:
Carl Hiram Holley.

Master of Arts.

In Classical Philology:
Anna Frances Weaver, A. B.

Alumni Association.

ORGANIZED JUNE 15, 1892.

CONSTITUTION.

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

3. The officers of this Association shall be a President; one Vice-President from each successive group of five classes, provided that when the last group shall number three classes it shall thereafter be entitled to a Vice-President; a Secretary; and a Treasurer.

4. There shall be an Executive Committee to consist of the following persons: the Secretary and Treasurer of the Association, and three other persons chosen by the Association, one of whom shall be designated as Chairman of the Committee.

5. It shall be the duty of the Executive Committee to arrange the programmes for Alumni Day and other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon them; and to attend to all business of the Association not otherwise provided for.

6. The President shall be *ex-officio* a member of all committees. At each annual business meeting he shall appoint a committee of two persons to audit the Treasurer's accounts.

7. The officers and the Executive Committee shall be elected by ballot at the annual business meeting to be held on Alumni Day, a majority of all votes cast being necessary for election.

8. Any proposition to alter or amend these Articles of Association must be made at a regular meeting, and have the assent of two-thirds of the members present.

OFFICERS FOR 1897–98.

President—Charles Kellogg Field, '95.

Vice President—Lester Jesse Hinsdale, '95.

Secretary—Clara S. Stoltenberg, '96.

Treasurer—Charles Ellwood Cox, A. M., '93.

Executive Committee—Clarke Butler Whittier, '93, Chairman; Charles Ellwood Cox, A. M., '93; Clara S. Stoltenberg, '96; John Francis Sheehan, Jr., '95; Henrietta Louise Stadtmüller, '95.

San Francisco Association.

President—Hugh Henry Brown, '96.

Vice-President—Scott Calhoun, '95.

Secretary—William Elder Stuart, '95.

Treasurer—John Mason Ross, '97.

[Other associations are requested to report lists of officers.]

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